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Rockhampton Regional Council

Industrial Land Use Study Final Study Report

December 2010



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Executive Summary

Introduction

GHD in association with Economic Associates has been commissioned by RRC to undertake the Industrial Land Use Study as part of the Rockhampton Regional Planning Scheme Project. This Study will inform the Industrial Strategy for the Region and along with the other Planning Studies of the Rockhampton Regional Planning Project, will provide direction in the drafting of the new Rockhampton Regional Planning Scheme (RRPS), Priority Infrastructure Plan (PIP) and Community Plan.

This report, namely the Final Study Report is the final of three reports that will inform the Industrial Strategy for the Rockhampton Region. The purpose of this report is to present the key findings of the Industrial Land Use Study and the proposed Industrial Strategy for the Rockhampton Region. More specifically this report will:

- ▶ identify existing vacant and developable industrial land across the Region;
- ▶ identify how much of unconstrained land would be available across key, long-term industrial development fronts in the Region;
- ▶ identify existing and potential locations of conflict between industrial activities and other, sensitive land uses and recommend how best to mitigate against these conflicts;
- ▶ review all current industrial zones across the Rockhampton Region and recommend a new zoning system compatible with the industrial zoning framework included in the State Government's *Queensland Planning Provisions*;
- ▶ determine how much land should be set aside across the Region to cater for industrial development to the year 2031 and the time frames for and sequence in which this land should be released; and
- ▶ assess the concept of establishing in the Region a transport node including appropriate supporting services and industries.

Emerging Strategic Issues

The review carried out of existing planning policies and studies identified emerging strategic issues affecting industrial land in the Rockhampton Region including:

- ▶ Emergence of land use conflicts due to the encroachment of residential and commercial development, limiting the expansion of industrial areas and / or the type of industrial development;
- ▶ Underutilised industrial land due to the lack of provision of adequate infrastructure including water, sewer and access, in addition to tenure, Native Title and physical constraints;
- ▶ Emergence of rural service industries and illegal industrial uses in rural communities and outskirts of centres;



- ▶ Physical constraints to existing industrial land including watercourse protection, flooding, steep land and significant vegetation; and
- ▶ Mismatches between location of industrial land supply and industrial land demand, in particular in relation to population serving industrial uses.

Industrial Land Demand

By 2031, there is an estimated demand for 180 hectares of industrial land. From a spatial point of view, the majority of this demand is expected to be experienced in some key sub areas including Parkhurst Kawana Industrial Area (58 ha), Stanwell Industrial Corridor (Precincts C-J 54 ha) and Yeppoon and Surrounds (21 ha). The majority of the estimated demand is for both medium impact industry (37.8%) and low impact industry (31.7%). In terms of sequencing, 97 ha or 53.9% of this demand, is expected by 2021.

Industrial Land Supply

There is an estimated 1,675 ha of vacant industrial land supply within the Rockhampton Region, of which 1,122 ha is considered developable. Key supply areas include Gracemere-Stanwell Industrial Precinct (941 ha) and Parkhurst Industrial Area (163 ha). Across the Region, regional flooding and drainage issues are the most constraining factors, however there are some particular issues which are of significance including:

- ▶ Parkhurst Industrial Area is a key supply area for the Region providing 163 ha of developable land, however 106 ha is currently considered restricted due to tenure, Native Title, drainage and infrastructure provision (access and stormwater) issues. In addition, due to residential encroachment threatening the continued use of this area for higher impact uses, the Area may see a transition to the lower impact uses.
- ▶ The Gracemere-Stanwell Industrial Precinct is the key supply area within Fitzroy and the Region, offering 941 ha of developable vacant land. The lack of provision of reticulated services and significant access issues related to the crossing of the railway line are currently restricting the development of this land. An overpass is currently being investigated by Department of Transport and Main Roads to address the access issue.
- ▶ Across the Rockhampton Region, there are also significant industrial uses or expanding / new industrial areas currently not zoned industrial. These include for example warehousing and storage operations in Depot Hill, Hastings Deering at Port Curtis and several extractive industries. Rural servicing industries, for example truck depots, are also prevalent in Precinct K particularly between Precincts B and C of the Gracemere-Stanwell Industrial Precinct.

Industrial Needs Assessment

The supply demand balance analysis indicates that there is an over supply of industrial land across the Region. The industrial needs assessment has identified however the following supply issues, which will require consideration in the industrial land strategy:



- ▶ **Rockhampton City Planning Area**
 - A shortage of low impact (3 ha) and medium impact (11 ha) industrial land has been identified in the central sub areas of Rockhampton. With resolution of current constraining factors, the Parkhurst Kawana Industrial Corridor Sub Area offers sufficient supply to accommodate these shortages.
 - A shortage of high impact (11 ha) and noxious and hazardous (13 ha) industrial land, in particular in the Parkhurst Kawana Industrial Corridor is anticipated by 2031. It is proposed that these types of industries should be encouraged to locate in the Gracemere-Stanwell Industrial Precinct.
- ▶ **Fitzroy Planning Area**
 - The Gracemere-Stanwell Industrial Precinct can supply the estimated demand for both Fitzroy Planning Area and the overspill from Rockhampton City Planning Area.
 - The Fitzroy Rural Sub Area is anticipated to experience a shortage of low and medium impact industrial land. Precincts B and C of the Gracemere-Stanwell Industrial Precinct, can accommodate this.
- ▶ **Livingstone Planning Area**
 - There is a need for 32 ha of additional zoned industrial land within the Livingstone Planning Area by 2031. To yield this supply, double the required land (64 ha) should be identified. As the majority of the anticipated demand is for low impact industry (additional 17 ha by 2031), it is proposed that this land be identified in proximity to the localities of Yeppoon and Emu Park.
 - There is an additional 57 ha of proposed industrial land located within the Livingstone Rural Balance sub area, in particular on the periphery of the Yeppoon and Surrounds sub area which could assist in accommodating this shortage.
- ▶ **Mount Morgan**
 - The Mount Morgan Township sub area will require 1 ha of additional industrial land identified, which is suitable for medium impact industrial uses. It is proposed that this land could be provided through infill or brownfield development within the township.
- ▶ **Intermodal Transport Precinct**
 - Suggested locations for the transport hub include Parkhurst Industrial Area, Gracemere-Stanwell Industrial Precinct (near Kabra), south of Rockhampton Airport and Port Curtis Rural Area.
 - Analysis undertaken by Economic Associates highlights that the sub areas within the Rockhampton Region with the highest demand for transport, logistics & related sectors are Parkhurst-Kawana Industrial Corridor Sub Area and Stanwell Industrial Corridor Sub Area. The potential site for this hub needs to be investigated further.



Proposed Expansion / New Industrial Areas

To accommodate the projected shortages of industrial land identified for the Rockhampton Region in the industrial needs assessment, potential areas for industrial expansion and/or new industrial areas have been proposed in all Planning Areas. In addition, in order to capture those industrial activities occurring outside of existing industrial zoned land, these areas have also been identified as potential expansion and/or new industrial areas. The proposed expansion and/or new industrial areas are as follows:

- ▶ Rockhampton – Airport Industrial Precinct, Depot Hill (existing industrial uses), Port Curtis Rural Area (Hastings Deering site) and Peak Hill Quarry;
- ▶ Fitzroy – Bajool Investigation Area, Precinct K between Precinct B and C of Gracemere-Stanwell Industrial Precinct and extractive industries at Pink Lily, Stanwell and Marmor;
- ▶ Livingstone – Hidden Valley, Pineapple Patch, Bondoola Investigation Area, Manns Road Emu Park, Tanby Road Yeppoon and extractive industries at Kunwarara and Nerimbera; and
- ▶ Mount Morgan – 1 ha of brownfield land within the township of Mount Morgan.

Industrial Land Strategy

In consideration of the above key findings of the Industrial Land Use Study, the following elements are proposed to comprise the industrial land strategy:

- ▶ *Consolidation of the current pattern of industrial development.*

The existing supply of vacant industrial zoned land in the Rockhampton Region will accommodate a significant proportion of the industrial land demand projections to 2031. Industrial areas of significance (ie areas that have the most vacant zoned industrial land) include Gracemere-Stanwell Industrial Precinct and Parkhurst Industrial Area.

Consolidation of existing industrial areas will require the resolution of constraining factors including tenure and Native Title, flooding and drainage problems, servicing and access issues.

- ▶ *Adoption of proposed expansion of existing industrial areas and creation of new industrial areas.*

In order to accommodate industrial land demand for the Rockhampton Region to 2031, potential expansion / new industrial areas have been identified. These areas will provide for the shortage of industrial land identified in the industry needs assessment and include:

- Rockhampton – Airport Industrial Precinct, Depot Hill (existing industrial uses), Port Curtis Rural Area (Hastings Deering site) and Peak Hill Quarry;
- Fitzroy – Bajool Investigation Area, Precinct K between Precinct B and C of Gracemere-Stanwell Industrial Precinct and extractive industries at Pink Lily, Stanwell and Marmor;



- Livingstone – Hidden Valley, Pineapple Patch, Bondoola Investigation Area, Manns Road Emu Park, Tanby Road Yeppoon and extractive industries at Kunwarara and Nerimbera; and
- Mount Morgan – 1 ha of brownfield land within the township of Mount Morgan.
- ▶ *Adoption of the proposed zoning framework to align with the Queensland Planning Provisions (version 2.0).*

The adoption of the proposed zoning framework, along with appropriate levels of assessment and performance criteria, will facilitate in clearly defining industrial areas, establishing their strategic role in the Region, ensuring appropriate assessment standards are applied and enable protection from incompatible uses.

- ▶ *Identification of an Intermodal Transport Precinct.*

Further investigations are required to determine the most appropriate location for an intermodal transport precinct in the Rockhampton Region. Pending infrastructure projects including the overpass of the Capricorn Highway at Kabra and the proposed bypass road and rail options for crossing of the flood plain will have a significant bearing on the most suitable location for the intermodal precinct.



1. Introduction

1.1 Background

The Central Queensland regional catchment produces an extensive range of products including minerals (principally coal, magnesium and nickel), beef, grains, horticulture and natural resources. Historically agriculture (beef industry) has been the dominant industrial activity, however more recently mining activity particularly in the lower Bowen Basin has provided stimulus to the Region.

Rockhampton Regional Council's (RRC) role as the focus for economic development across the wider Central Queensland region has eroded over time, with the growth of competing centres arising from the exploitation of new mineral resources. Gladstone services the coal industry; Bundaberg's local economy is based on the sugar industry; and Mackay servicing both.

The Industrial Land Use Study presents an opportunity for the new Rockhampton Regional Planning Scheme to set the strategic direction for industrial land uses within the wider Central Queensland area including what significant industries will be serviced.

On this basis, GHD in association with Economic Associates has been commissioned by RRC to undertake the Industrial Land Use Study as part of the Rockhampton Regional Planning Scheme Project. This Study will inform the Industrial Strategy for the Region and along with the other Planning Studies of the Rockhampton Regional Planning Project, will provide direction in the drafting of the new Rockhampton Regional Planning Scheme (RRPS), Priority Infrastructure Plan (PIP) and Community Plan.

The Industrial Land Use Study will aim to enable informed decisions to be made regarding the supply of land across the Region to facilitate an orderly industrial growth to the year 2031. Importantly, this Study will look closely at the needs of rural service industries across the Region to ensure the new planning scheme provides an appropriate framework for a sustainable growth of rural economy and prosperity across the Region's rural communities. The Study will also assist in scoping the most appropriate approaches to minimising existing and potential conflicts between industrial areas and other, sensitive land uses.

1.2 Purpose of Report

This report, namely the Final Study Report is the final of three reports that will inform the Industrial Strategy for the Rockhampton Region. The purpose of this report is to present the key findings of the Industrial Land Use Study and the proposed Industrial Strategy for the Rockhampton Region. More specifically this report will:

- ▶ identify existing vacant and developable industrial land across the Region;
- ▶ identify how much of unconstrained land would be available across key, long-term industrial development fronts in the Region;



- ▶ identify existing and potential locations of conflict between industrial activities and other, sensitive land uses and recommend how best to mitigate against these conflicts;
- ▶ review all current industrial zones across the Rockhampton Region and recommend a new zoning system compatible with the industrial zoning framework included in the State Government's *Queensland Planning Provisions*;
- ▶ determine how much land should be set aside across the Region to cater for industrial development to the year 2031 and the time frames for and sequence in which this land should be released; and
- ▶ assess the concept of establishing in the Region a transport node including appropriate supporting services and industries.

1.3 Relationship to Other Studies

In June 2009, the new planning scheme project commenced and three phases necessary for the completion of the planning scheme were identified. The three phases being:

- ▶ Phase One – Determining the Strategic Framework;
- ▶ Phase Two – Responding to Strategic and Setting Policy Direction; and
- ▶ Phase Three – Statutory Instrument (including SPA process).

The Industrial Land Use Study falls into Phase One – Determining the Strategic Framework. More specifically this involves the identification of studies required for the planning scheme; ensuring that the direction of the Rockhampton Towards 2050 is followed; and the alignment of studies and ensuring these studies support the requirements for the RRPS. The employed consultant for the RRPS will be required to analyse and implement the outcomes of each study into the new scheme.

This Industrial Land Use Study forms part of many delivery tools for the strategic framework of the RRPS. As identified previously the Industrial Land Use Study will set the strategic framework of the scheme and provide direction for assessment criteria within the industry zone codes and industry design codes. The study itself will be developed solely for the purposes of the new planning scheme and will not provide initiatives across the organisation.

The Regional Priority Infrastructure Plan for the RRPS will require data collected by the Industrial Land Use Study, particularly in relation to strategic direction (growth maps and zones), employment data, land type, land take-up and potential timing of development.

1.4 Study Area

The study area comprises land contained within the Rockhampton Regional Council local government area and includes:

- ▶ Fitzroy Planning Area (former Fitzroy local government area);



- ▶ Livingstone Planning Area (former Livingstone local government area);
- ▶ Mount Morgan Planning Area (former Mount Morgan local government area); and
- ▶ Rockhampton City Planning Area (former Rockhampton local government area).

As defined by the Economic Development and Employment Study, the Rockhampton Regional Council has been divided into a total of 21 sub areas based on existing and planned activity within the Rockhampton Region and its component planning areas. The sub areas were defined based on Census collection district boundaries, the smallest geographic area defined in the Australian Standard Geographical Classification. These areas have also been adopted for the Industrial Land Use Study.

The sub areas within each planning area are as follows:

- ▶ Rockhampton City Planning Area:
 - Airport;
 - CBD;
 - North Rockhampton Balance;
 - North Rockhampton Commercial Corridor;
 - North Rockhampton Industrial;
 - North Rockhampton Residential;
 - Parkhurst- Kawana Industrial Corridor;
 - South Rockhampton Industrial;
 - South Rockhampton Balance;
 - South Rockhampton Commercial Corridor; and
 - South Rockhampton Residential;
- ▶ Fitzroy Planning Area:
 - Gracemere;
 - Stanwell Industrial Corridor; and
 - Fitzroy Rural;
- ▶ Livingstone Planning Area:
 - Emu Park and Surrounds;
 - Kinka Beach and Surrounds;
 - Livingstone Rural Balance;
 - The Caves/Rockyview; and
 - Yeppoon and Surrounds;
- ▶ Mount Morgan Planning Area:
 - Mount Morgan Township; and
 - Mount Morgan Rural.

Figure 1-1 outlines the geographic boundaries of the sub areas identified within Rockhampton Regional Council. **Figure 1-2** provides a detailed map of the geographic boundaries of the sub areas within Rockhampton planning area.



Figure 1-1 Rockhampton Regional Council Sub Areas

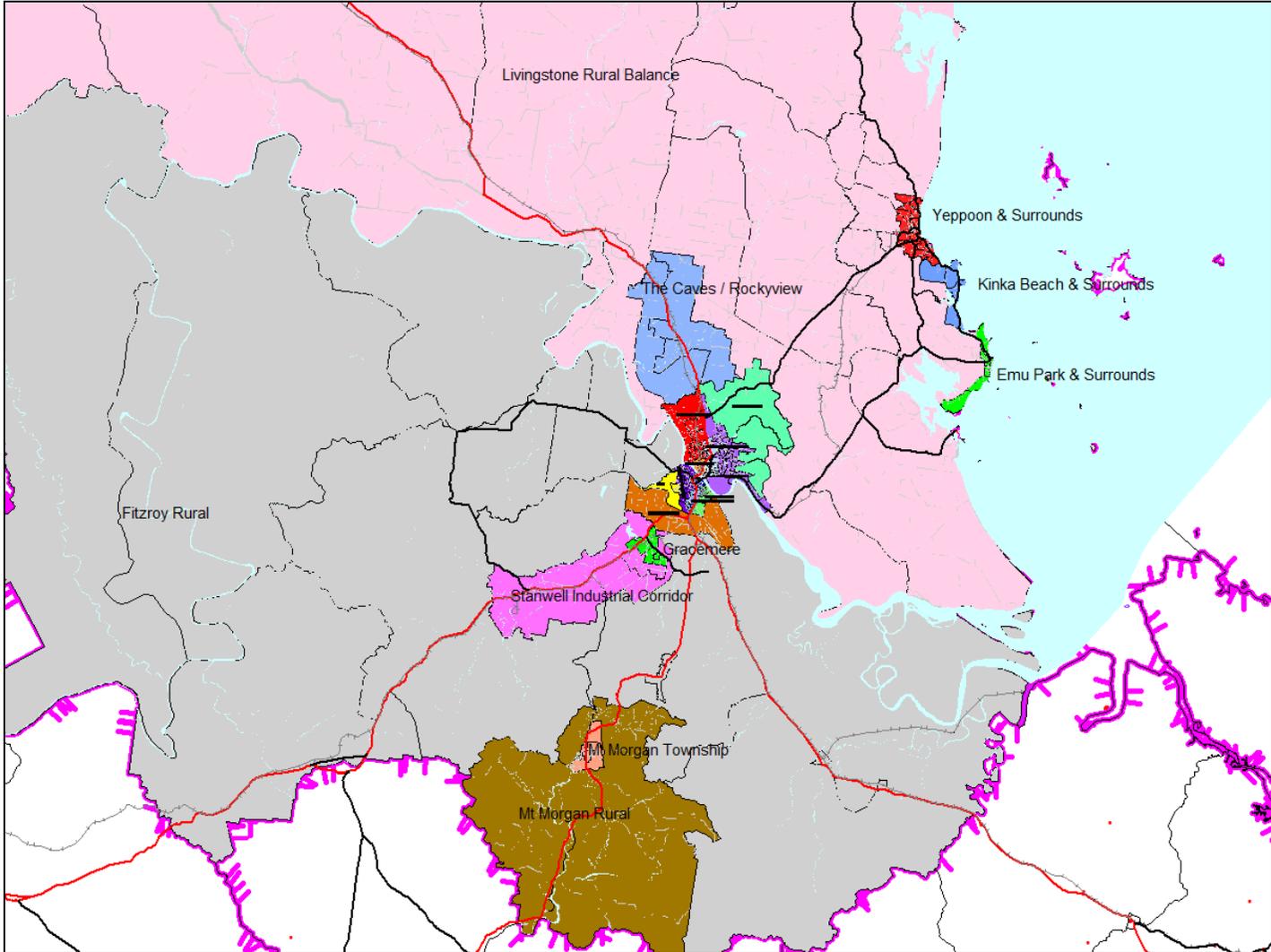
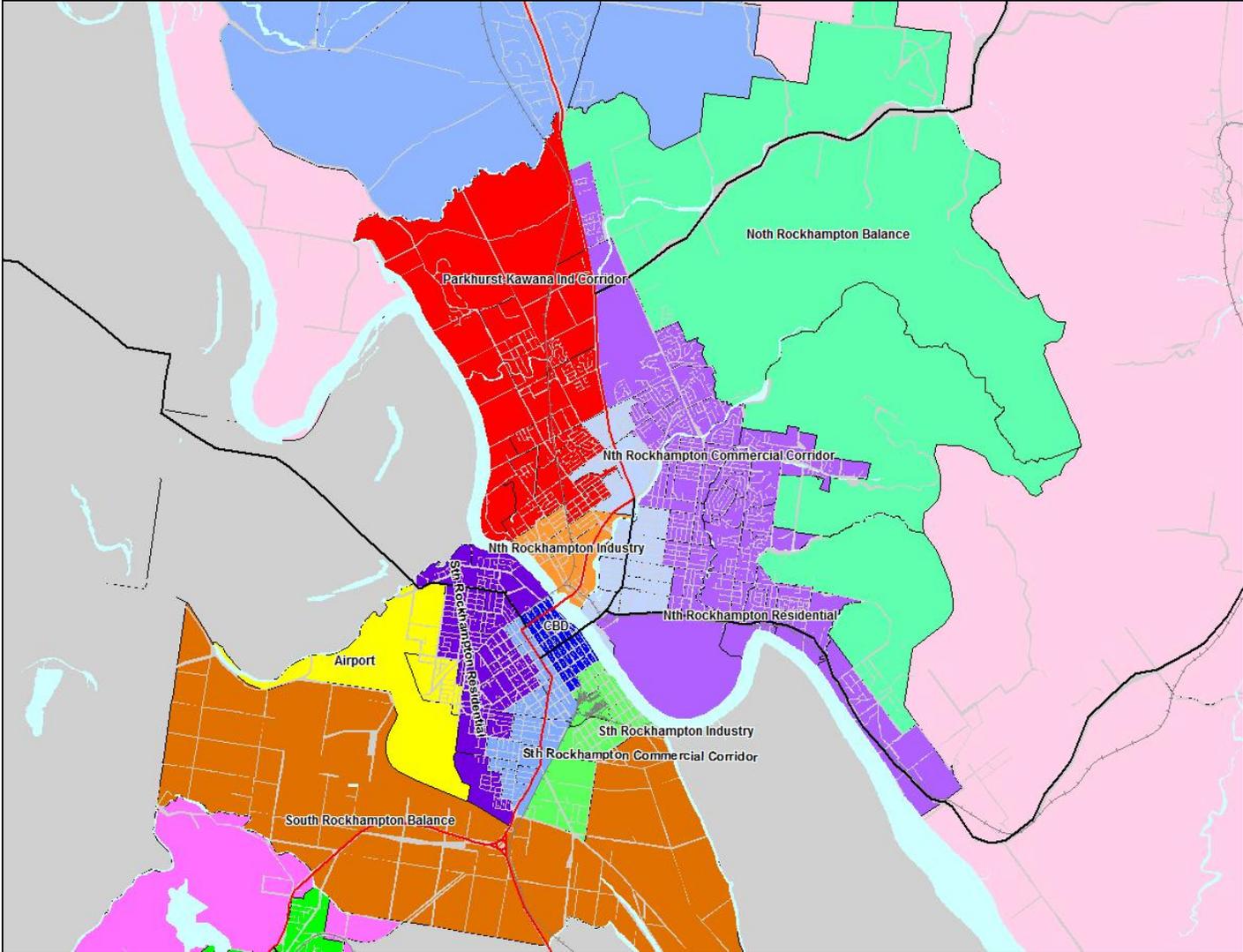




Figure 1-2 Rockhampton City Planning Area Sub Areas





1.5 Methodology

The overall methodology for the Rockhampton Regional Industrial Land Availability Study is depicted in **Figure 1-3**.

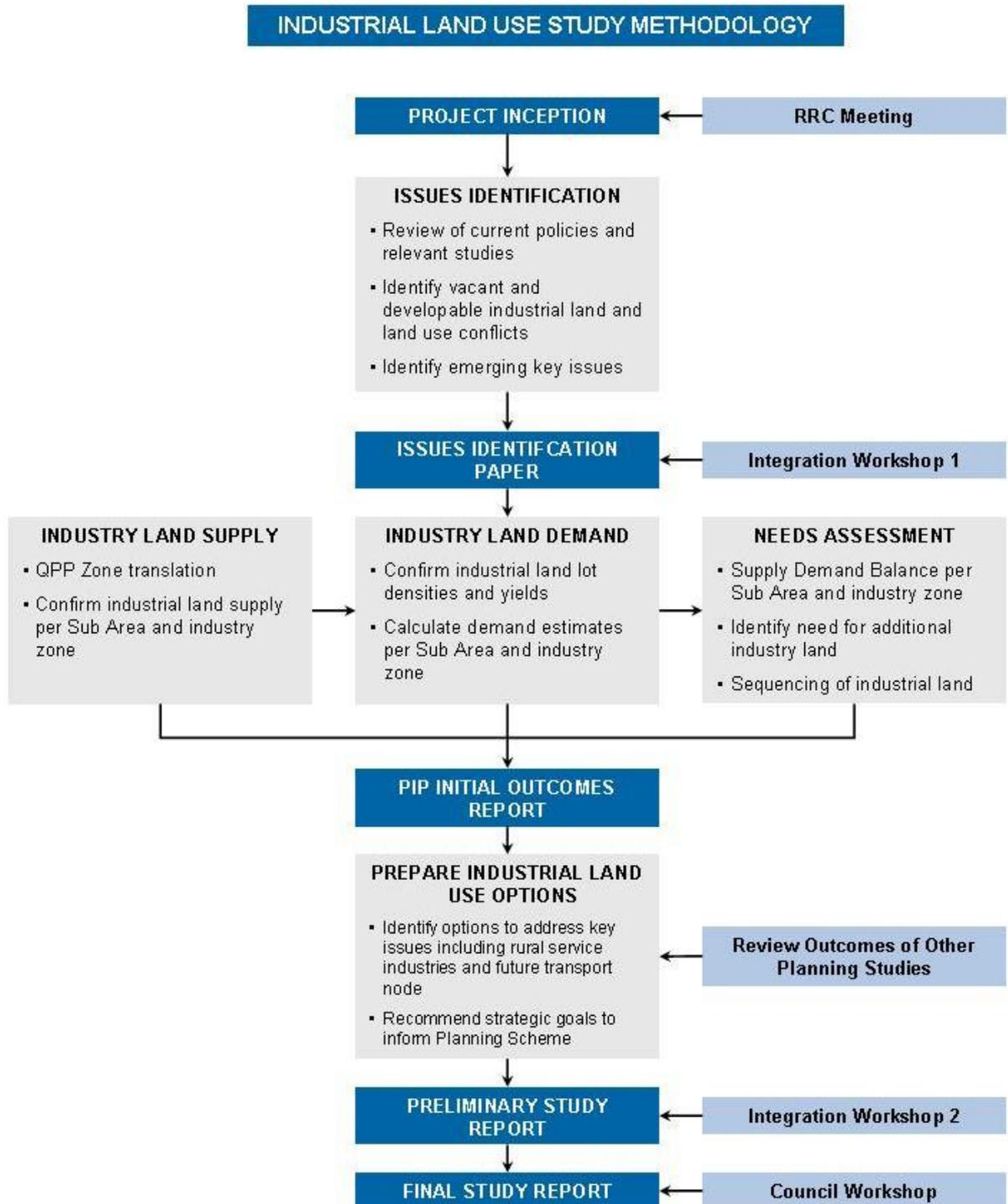
Key players involved in the Study are as follows:

- ▶ **Rockhampton Regional Council** who are leading the Study;
- ▶ **Study Team** involving a number of specialists selected based on their specific skills and direct experience covering the various elements of the Study; and
- ▶ **Study Teams of other Planning Studies** involving professionals from a number of consultancies responsible for the preparation of the other Strategies of Phase One - Determining the Strategic Framework of the RRPS.

To provide a comprehensive land use solution, the above key players have participated in workshops to ensure integration of process and outcomes.



Figure 1-3 Study Methodology





2. Policy Context and Literature Review

This Study, along with the other planning studies, will inform the preparation of the new Rockhampton Regional Planning Scheme (RRPS) to assist in effectively regulating planning and development of industrial land. This section of the report will consider the existing policy context at a State, Regional and Local level and key outcomes of previous planning studies and strategies. The following provides a summary of the implications of these policies and studies and identifies the emerging key issues relating to industrial land in the Rockhampton Region.

2.1 Current Policy Context

The principal planning instruments relevant to the Rockhampton Region include:

- ▶ Sustainable Planning Act 2009;
- ▶ Iconic Places Act 2008;
- ▶ State Planning Policies and Statutory Guidelines;
- ▶ The *Central Queensland Regional Growth Management Framework 2002* (the current, non-statutory, regional planning instrument); and
- ▶ The current planning schemes of the former Rockhampton City, Livingstone, Mount Morgan and Fitzroy LGAs.

2.1.1 State Policy Context

Sustainable Planning Act 2009 and Queensland Planning Provisions

The *Sustainable Planning Act 2009* (SPA) and supporting regulations commenced on 18 December 2009. The new RRPS is required to be undertaken in accordance with the SPA and will be used to facilitate the management of the Region's future growth and associated change in accordance with the SPA concept of achieving "ecological sustainability". The purpose of SPA also refers to considering housing choice and diversity, and economic diversity.

Chapter 2, Parts 5 and 6 of the SPA enables the planning Minister to make standard planning scheme provisions, namely the Queensland Planning Provisions (QPP). The QPP (version 1.0), which became available at the commencement of SPA, has the force of law pursuant to the *Statutory Instruments Act 1992* and will form the template for any new planning scheme for a local government area. QPP (version 2.0) has since been released on 4 October 2010.

In summary, these provisions are a set of standard planning scheme provisions that RRC need to use to develop the RRPS. Any study seeking to provide strategic direction for a new planning scheme should be aligned with the strategic outcomes, zones, definitions and codes contained within the QPP.

The strategic framework sets the policy position for the whole of the planning scheme area and identifies the future development intent. The strategic framework comprises



themes, strategic outcomes, elements, specific outcomes and land use strategies. Where there is a regional plan, as is the case for the Rockhampton Region, the themes are derived from the desired regional outcomes for the regional plan. The *Central Queensland Regional Growth Management Framework* identifies six themes of which the following are applicable to industrial land:

- ▶ resource use, conservation and management;
- ▶ economic development; and
- ▶ infrastructure.

With regards to zones, a standard suite of zones is provided and arranged in categories of uses – residential, centres, recreation, industry and other. The standard suite of zones also encompass level 1 and level 2 zones. Only zones from the standard suite can be used in the planning scheme.

The zones provided by the Industry category consist of the following:

- ▶ Low Impact Industry;
- ▶ Medium Impact Industry;
- ▶ High Impact Industry;
- ▶ Noxious and Hazardous Industry;
- ▶ Waterfront Marine Industry;
- ▶ High Technology Industry; and
- ▶ Industry Investigation.

The Other category also provides for Extractive Industry.

Other key components of the QPP which have implications for industrial land includes:

- ▶ Industrial zone codes and Use Codes which regulate industrial design; and
- ▶ Schedule 1 Definitions which defines specific industrial use types.

The outcomes of the Industrial Land Use Study will need to inform the Strategic Framework, in particular the strategic outcomes and appropriate zoning for industrial land within the Rockhampton Region.

Iconic Places Act 2008

In August 2007, the government made a commitment to prepare new legislation to give greater protection to the state's nationally and internationally recognised natural icons located in the areas of new regional councils. This commitment addressed concerns that distinguishing characteristics of local government areas may be overlooked by the larger regional councils established under the local government reform.

The *Iconic Queensland Places Act 2008* (IQPA) and the *Iconic Queensland Places Regulation 2008* (IQP regulation) were developed to protect particular places in Queensland with iconic characteristics or qualities. The IQPA protects established iconic places by providing for the declaration of iconic places; decision making processes regarding modification of laws; and procedures about planning,

development assessment and local laws by local governments. The IQP regulation provides for matters specific to the iconic panels established under the IQPA, such as a register of interests and a code of conduct.

Four areas in Queensland have been approved by the Minister for Planning and declared in the government gazette. One of these areas is the Central Capricorn Coast in the Livingstone Planning Area. This legislation will therefore potentially affect the location and designation of future industrial land on the Capricorn Coast.

State Planning Policies and Regulations

Matters of State planning significance relevant to this Study include the following key considerations of the current State Planning Policies and Regulations:

- ▶ *State Planning Policy 1/92 – Development and the Conservation of Agricultural Land* Good Quality Agricultural Land (GQAL) will need to be protected from most types of industrial uses, although some 'food' related industry that support agricultural uses may be appropriate;
- ▶ *State Planning Policy 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide* Flood and bushfire risk will be a particular constraint in some areas (e.g. both Parkhurst and Gracemere-Stanwell areas have prominent watercourses) and use of recent data will be important in identifying such areas;
- ▶ *State Planning Policy 2/07—Protection of Extractive Resources* Key Resource Areas (KRAs) in the Rockhampton, Livingstone and Fitzroy Planning Areas are of significance and should be protected from inappropriate development;
- ▶ *State Planning Policy 1/02 – Development in the Vicinity of Certain Airports and Aviation Facilities* Operational space and aircraft activities should be a consideration and there may be opportunities for preferred development of industrial uses in areas of Significant Aircraft Noise;
- ▶ *State Planning 2/02 – Development Involving Acid Sulfate Soils* The presence of acid sulphate soils, while not ideal, is not considered an unworkable constraint and should be considered in light of other planning considerations and objectives;
- ▶ *Draft State Planning Policy – Air, Noise and Hazardous Material* Adequate separation and buffering between land zoned for industrial activities and land zoned for sensitive land uses need to be adopted in order to protect communities and individuals from the impacts of air, odour and noise emissions and hazardous materials and the protection of industrial uses from unreasonable encroachment by incompatible land uses. Suggested separation distances to land zoned for sensitive uses are 250 metres for medium impact, 500 metres for high impact and 1500 metres for noxious and hazardous industries. It is expected that this Policy will come into affect in February 2011; and
- ▶ In relation to local Priority Infrastructure Plans (PIPs), to be implemented with the new RRPS (as required by Statutory Guideline 01/09), this study will need to consider the areas of planned trunk infrastructure to support the efficient and sustainable development of each centre.



2.1.2 Regional Policy Context

An existing non-statutory regional planning document, the *Central Queensland Regional Growth Management Framework*, was completed in 2002 and provides the regional framework for guiding growth and sustainability for the Central Queensland division. The primary goals of the Framework are to:

- ▶ Provide an integrated whole of region approach to planning and governance;
- ▶ Stem the leakage of human and financial capital from this Region; and
- ▶ Position the Region in order to maximise the competitive advantage and sustainability of its future.

It is intended that this document, will progress towards a statutory regional plan.

The following key planning directions from the document are of particular significance to industrial activity in the Rockhampton Region:

- ▶ Rockhampton City is considered to continue to be the major economic and administrative centre within the greater Central Queensland Region;
- ▶ The regional areas of significant expected industrial expansion include the Gladstone State Development Area (GSDA) and Gracemere–Stanwell Industrial Precinct; and
- ▶ The Gracemere–Stanwell Industrial Precinct is expected to accommodate a variety of large scale and regionally important industries. Along with support from the Parkhurst Industrial Area within Rockhampton City itself, it is the key major regional industrial growth area within the Study Area.

2.1.3 Local Policy Context

Rockhampton Region Towards 2050

The Rockhampton Region Towards 2050 Strategic Framework was completed in March 2010 and considers what future is desirable for the Rockhampton Region for the year 2050 and beyond. Six priority initiatives have been identified for the short term. The applicable initiatives to industrial land include:

- ▶ Priority Initiative 2 – Information (collection of data);
- ▶ Priority Initiative 4 – Lifestyle (industry land use, new town & sustainable development) including:
 - *Future Efficient Infrastructure Corridors* Designate infrastructure and transport corridors to maximise efficiencies in planning and infrastructure delivery;
 - *Plan to Service Resource Industry Boom in Short Term* Provide housing and supporting industry to service the mining boom, with the consideration of a post-mining future in 2040;
- ▶ Priority Initiative 5 – Investment (understand strategic assets) including:



- *Diversify the Economy* Engage with non-resource regional business and industry stakeholders as well as conducting economic and industry analysis to identify development opportunities not related to the resources sector;
- *Allocate Land for Jobs* Identify suitable employment precincts to support growth in local industries such as food production, manufacturing, retail and renewable energy infrastructure across the Region; and
- ▶ Priority Initiative 6 – Council including:
 - *Minimise Red Tape* Assist the relocation and expansion of businesses to the Rockhampton Region by improving the efficiency of “permitting and approvals” processes.

Planning Schemes

The Rockhampton Regional Council’s planning framework is made up of the planning schemes of the former local government areas (prior to amalgamation in 2008). These include:

- ▶ Rockhampton City Plan;
- ▶ Fitzroy Shire Planning Scheme;
- ▶ Livingstone Shire Planning Scheme; and
- ▶ Mount Morgan Planning Scheme.

The regulation of industrial development under the current four planning schemes has resulted in a number of issues, which need to be addressed by the new RRPS. A summary of these issues has been outlined below.

- ▶ The occurrence of illegal and / or out of zone industrial uses and industrial subdivisions is apparent in the Rockhampton City, Livingstone and Fitzroy Planning Areas. These include for example:
 - The Hidden Valley and ‘Pineapple Patch’ industrial subdivisions located on the urban fringe of Yeppoon and the proposed industrial subdivision of Manns Road, Emu Park;
 - Industrial land uses located within the Port Curtis Rural Area and Depot Special Use Area and the impact upon existing residential areas and environmental constraints;
 - Illegal land uses including the parking of trucks on residential land (particularly Gracemere), salvage yards (including building storage, vehicles, and household goods) and vehicle depots. These activities are situated in a variety of areas including Port Curtis, Fairy Bower, Pink Lilly and Alton Downs (rural zoned areas in relevantly close proximity to urban areas);
- ▶ Poorly defined or transitioning industrial areas have led to the emergence of land use conflicts between industrial land and adjacent land uses. This is a significant issue for the Rockhampton Region and examples of this include:
 - Existing industrial land uses located along Tanby Road, Yeppoon are either adjoining or intermixed with residential dwellings;

- Impact upon the Lakes Creek residents resulting from the operation of the Lakes Creek Meat Works;
- A mix of residential and industrial uses is common within the South Rockhampton Low Impact Industrial Area, Parkhurst Industrial Area – Low Impact Precinct and Gracemere-Stanwell Industrial Precinct B;
- Residential encroachment upon the Parkhurst Industrial Area, particularly to the north has limited the expansion of heavy industry in this Area;
- ▶ There is a significant amount of existing industrial land in the Rockhampton Region, which is under-utilised due to the lack of infrastructure or physical constraints. Industrial areas affected by such issues include:
 - The Parkhurst Industrial Area has several constraining issues including unacceptable grade, tenure and Native Title, environmental constraints (flooding, waterways, remnant vegetation), poor transport connectivity between industrial land and the Bruce Highway and lack of infrastructure (reticulated services and stormwater);
 - The Gracemere-Stanwell Industrial Precinct is currently unserved, with the exception of Precincts A and B. In addition, there is limited heavy vehicle access across the Central Railway line to industrial land south of the Capricorn Highway (particularly Precincts B, C, D and J). Several Precincts within the Gracemere-Stanwell Industrial Precinct are also subject to drainage and or regional flooding issues;
- ▶ There is a conflict between planning scheme provisions and the expectations of industry. Approval timeframes and planning scheme provisions are inherently inconsistent across the four planning schemes and are considered to be too onerous; and
- ▶ The majority of enquiries to Council related to industrial uses are for the accommodation of vehicle depots, salvage yards and self storages. These uses require larger parcels of land, whereby the current cost of the existing industrial zoned land is too high (land and infrastructure costs) for the expected turnover. There is a need to identify suitable land for such uses.

2.2 Previous Planning Studies and Strategies

The strategic direction and requirements for the current planning schemes were mainly based upon previous industrial studies and strategies undertaken either by the individual Council or by State Government. The following provides a summary of the relevant studies.

2.2.1 Stanwell-Gracemere Corridor Development Control Plan No 3

In 2002 the Fitzroy Shire Council adopted the Stanwell-Gracemere Corridor Development Control Plan No 3 (the DCP) and included it in its planning scheme. The industrial corridor covered by this control plan includes areas of land from Gracemere through to and including the Stanwell Power Station and former Energy Park.



The DCP for the industrial precincts in the Stanwell-Gracemere area had set the parameters of opportunity for industrial growth and further work was done to quantify the economic drivers for this growth. This included a demand study identifying suitable industries and modelling relating to necessary infrastructure.

The more recent identification of the need for an overpass to access the industrial precinct presented a major obstacle to development in the corridor. Preliminary costs for the overpass prepared by the former Department of Main Roads ranged from \$25 million to \$53 million.

This overpass need was identified as a result of the limit of 5.2 metres height imposed by the electrified rail. Such height restrictions would limit severely the range of uses possible on the land together with heavy vehicle access that may be required to service the land uses on the other side of the track.

2.2.2 Rockhampton / Fitzroy Industrial Land Demand Study

In 2007, the Department of Infrastructure commissioned Economic Associates Pty Ltd to prepare the Rockhampton/Fitzroy Industrial Land Demand Study in response to an increase in industrial land demand in the Rockhampton and Fitzroy local government areas. The purpose of the report was to identify industrial market activity within the Rockhampton/Fitzroy regions, estimate future industrial land demand and identify the ongoing industrial land need (i.e. the amount of additional land required over and above existing supply) of the region.

The needs investigation identified the following anticipated outcomes for the next 20 years:

- ▶ Industrial land needs of transport and distribution can be met by existing industrial land supply at Parkhurst Industrial Area and the Gracemere-Stanwell Corridor Business and Industry Precinct B, providing access issues area addressed;
- ▶ Industrial land needs of agricultural related industrial activities can be met by existing industrial land supply in the Gracemere-Stanwell Corridor General Industry Precinct A;
- ▶ Industrial land needs of mining related industrial activities cannot be met by the existing supply of serviced industrial land in the region;
- ▶ Industrial land needs for general manufacturing and service industry can largely be met by existing industrial land supply, but investigation of future potential service industry precincts in southern Rockhampton may be necessary.

Recommendations from the needs investigation included:

- ▶ Provision of grade separated overpasses of the Central Railway at Malchi-Nine Mile Road and Kabra within the Gracemere-Stanwell Corridor;
- ▶ Agriculture related industrial activities be encouraged to establish within the Gracemere-Stanwell Corridor General Industry Precinct A;

- ▶ The ongoing development of the Gracemere-Stanwell Corridor Business and Industry Precinct B to be encouraged in the form of a transport and distribution precinct with some service industry;
- ▶ A major general industry precinct with high standard road access (including grade separated overpass of the Central Railway) be developed by the State Government within the Gracemere-Stanwell Corridor to accommodate mining related industrial activities and other large lot industrial land users;
- ▶ Investigate the potential of developing the land identified as the Port Curtis investigation area for industry, particularly in relation to flooding; and
- ▶ Investigation of the feasibility of, and land suitability for an aviation and service industry precinct in the Rockhampton Airport precinct.

2.2.3 Rockhampton Citywide Industrial Land Use Strategy

In 2002, the Rockhampton City Council in the process of preparing its new planning scheme, the Rockhampton City Plan, identified the need to undertake a review of industrial land in Rockhampton. Subsequently the Rockhampton Citywide Industrial Land Use Strategy was prepared and analysed the future industrial land use requirements for the Rockhampton LGA to the year 2020. The aim of the Strategy was *'To identify economic strategies to attract industries to Rockhampton, and once recognised, to nominate location and environmental parameters for the establishment/operation of industries within the City'*.

Rockhampton's requirements for industrial land calculated from Department of State Development methodology and based on employment demand, will range from about 300 to 400 hectares if the population reaches 70,000 and 400 to 500 hectares if the population reaches 90,000.

Estimates based on the assumption that Rockhampton's population could experience growth impetus associated with expected increased economic investment in the region suggest that the City's population could reach 70,000 by 2010 and 90,000 beyond 2030.

There are currently about 800 hectares of land designated for industrial activities in the City's Strategic Plan (1997). If the recommendations of this strategy are adopted, this will increase to about 900 hectares mainly through the addition of an airport industrial precinct. Consequently, Rockhampton has adequate supplies of industrial land for several decades.

2.2.4 Retail Review and Industrial Lands Strategy – Livingstone Shire Council

The Retail Review and Industrial Lands Strategy were completed in December 2007 for the previous Livingstone Shire Council. The Retail Review provided an analysis of the retail floorspace requirement, both current and future, for the previous Livingstone Shire. The objective of the Employment Lands Study was to identify the likely future demand for commercial and industrial land and provide advice on supporting



infrastructure for this land. The strategy identified the following recommendations in relation to the Retail Review and Employment Lands Study.

The Retail Review recommended the following:

- ▶ Council should monitor closely the level at which current planning approvals are realised in relation to both residential development and retail floor space;
- ▶ Council should closely monitor progress in relation to the future release of residential land, current retail planning applications and its impact on demand for retailing. Retail development and timing should be provided accordingly;
- ▶ Council should undertake a review of the retail strategy in 3-5 years to account for changes in the market; and
- ▶ In order to maintain certainty for the marketplace, the retail strategy could be either included into local planning policies or strategies that are administered through the Planning Scheme.

The Employment Lands Study sets out a framework for industrial land in Livingstone Shire which provides:

- ▶ A rolling 15-year 'adequate supply' is identified and protected to ensure a planned supply of industrial land is available to meet future demand; and
- ▶ The availability of an immediate 68 hectare supply of industrial land. Of this supply, at least 37 hectares should be zoned industrial, and the remaining 21 hectares should be in advanced planning for future development and be available to meet demand if it increases.

Additional work was recommended to confirm the suitability of specific parcels of industrial land to support the rezoning of the land and to achieve industrial development in the area.

In addition, it was further identified that an important requirement for guiding the future development of the Yeppoon and Emu Park Employment Lands would be the preparation of a Structure Plan incorporating a layout plan of each precinct for industry. This would identify the standards of design and environmental standards that should apply to any development in the area and should be given statutory weight by being included in the scheme.

2.3 Current Studies Being Undertaken

2.3.1 Rockhampton Regional Industrial Land Availability Study

The Rockhampton Regional Industrial Availability Study (RRILAS) is currently being undertaken by the Department of Infrastructure and Planning with the following aims:

- ▶ Review the Rockhampton/Fitzroy Industrial Land Demand Study to include additional information relating to the former Livingstone and Mount Morgan Shires and other towns within the Rockhampton Region and the potential for industrial land demand as a result of increased coal mining and LNG extraction in the lower Bowen, Galilee and Surat Basins;

- ▶ Inform the State Government and Rockhampton Regional Council of the relevant characteristics and constraints, including the required infrastructure, affecting the future ecological sustainable development of the Gracemere-Stanwell Industrial Precinct and the industrial land uses that could be appropriately established within the precinct; and
- ▶ Identify other alternative areas for industrial development which can be planned in conjunction with the major infrastructure services and urban growth areas to support a robust sub-regional economy.

Key findings of the Study have identified the following in relation to industrial land in the Rockhampton Region:

- ▶ The Rockhampton Region has adequate existing industrial land to accommodate the projected industrial land demand, with an oversupply anticipated across the Region by 2031.
- ▶ Disaggregated by Planning Area however, there are some supply issues apparent which will need to be addressed:
 - There is a need to identify additional industrial land in the Livingstone and Mount Morgan Planning Areas, to accommodate anticipated supply shortfalls by 2031.
 - The Parkhurst Industrial Area is the key supply area for the Rockhampton City Planning Area. A supply issue is evident however, as a significant amount of vacant industrial land is not development ready (due to various constraints) and residential encroachment limits the suitability of Parkhurst Industrial Area for future large footprint, high impact industries. The Gracemere-Stanwell Industrial Precinct provides an alternative locality for accommodating these uses.
 - In order to accommodate the projected demand for both the Fitzroy Planning Area and the overspill from Parkhurst Industrial Area, infrastructure and access issues constraining land in the Gracemere-Stanwell Industrial Precinct will need to be resolved.

2.3.2 Gracemere Industrial Access Project

The Gracemere Industrial Access Project is being undertaken by Transport and Main Roads. An allocation of \$10 million was set aside in this year's State Government budget for planning work and resumptions for access to the industrial land between Gracemere and Kabra. Up to \$60 million may become available in next year's budget to build the overpass which may be finished by the end of 2012.

2.3.3 Gracemere–Stanwell Rail Corridor Study

The Gracemere – Stanwell Corridor Study which is being undertaken by Transport and Main Roads, Rockhampton Regional Council, Queensland Rail and Department of Infrastructure and Planning to enable the rail line to be duplicated by 2012. A draft



report has been completed which is being reviewed. This report is expected to be completed by August 2010.

2.3.4 Fitzroy River Floodplain and Road Planning Study

The Fitzroy River Floodplain and Road Planning Study is currently being undertaken by the Federal Government and Transport and Main Roads. This has progressed through issues, options development and merit reports. Scoring and culling of the options and the identification of any fatal flaws was expected to be completed by August 2010 with a draft options report to be developed by September 2010. Public consultation of the selected options is to occur in November 2010.

2.4 Strategic Issues

The above review of existing policy and previous and current studies has identified significant issues with the current industrial land use pattern in the Rockhampton Region. These significant issues have been categorised as strengths, weaknesses, opportunities or constraints and are shown in the following **Table 2-1**.

Based on the review carried out, the emerging strategic issues affecting industrial land in the Rockhampton Region are as follows:

- ▶ Emergence of land use conflicts due to the encroachment of residential and commercial development, limiting the expansion of industrial areas and / or the type of industrial development;
- ▶ Underutilised industrial land due to the lack of provision of adequate infrastructure including water, sewer and access, in addition to tenure, Native Title and physical constraints;
- ▶ Emergence of rural service industries and illegal industrial uses in rural communities and outskirts of centres;
- ▶ Physical constraints to existing industrial land including watercourse protection, flooding, steep land and significant vegetation; and
- ▶ Mismatches between location of industrial land supply and industrial land demand, in particular in relation to population serving industrial uses.



Table 2-1 SWOT Analysis

<p>Strengths</p> <ul style="list-style-type: none"> ▶ Access to economic hinterland of the lower Bowen Basin and Galilee Basin ▶ Access to major power generation facilities ▶ Significant supply of land within Gracemere-Stanwell having potential to meet regional industrial needs ▶ Proximity to major primary production (i.e. agriculture & mining) supplier / input markets ▶ Diversity of regional employment opportunities (e.g. established manufacturing and transport & logistics, primary production) ▶ Significant industry specialisation in transport & logistics and some manufacturing sectors ▶ Shoal Water Bay Training Facility and Defence Base Precinct 	<p>Weaknesses</p> <ul style="list-style-type: none"> ▶ Limited opportunity to expand industrial land zoning in Rockhampton ▶ Mismatches between location of industrial land and location of population (e.g. service industry land in Livingstone) ▶ No industry zone in Mount Morgan ▶ Lack of zoned land that is fully serviced (infrastructure provision) ▶ Lack of zoned land that is appropriately subdivided (existing lot sizes are not appropriate to industry needs) ▶ Lack of good transport access to sites eg Parkhurst and limited heavy vehicle grade separation (Capricorn Highway) to access industrial land within the Gracemere–Stanwell Industrial Precinct (particularly Precincts B, C, D) ▶ Illegal industrial operations (eg Port Curtis Rural Area) and the impact upon existing residential and environmental constraints ▶ Mix of residential, commercial and industrial uses located within the South Rockhampton Low Impact Industrial Area, Central Business District Commercial Area, Parkhurst Industrial Area – Low Impact Precinct and Gracemere–Stanwell Industrial Precincts B and C ▶ Existing industrial land affected by regional flooding
<p>Opportunities</p> <ul style="list-style-type: none"> ▶ Growing resources sector in lower Bowen Basin and Galilee Basin ▶ Proposed Western/Eastern road and rail would create transport and logistics opportunities and alleviate access issues ▶ Coordination and forward planning for industrial areas located on the fringe of Yeppoon and Emu Park to cater for Capricorn coast ▶ Role and function of the Bajool Special Industry Zone (Bajool Explosive and Magazine area) and Strategic Port Land located at Port Alma ▶ Formalising rural servicing industries in the Gracemere–Stanwell Industrial Precinct and rural communities ▶ Underutilised industrial land in Gracemere– Stanwell Industrial Precinct and Parkhurst ▶ Value added opportunities in traditional sectors, such as food processing, and potential emerging sectors, such as mining equipment servicing and manufacture ▶ Regional transport and logistics hub 	<p>Threats</p> <ul style="list-style-type: none"> ▶ Competing centres including Gladstone, Mackay and Central Highlands for locating emerging industries supporting the mining and resource industry ▶ High costs to service industrial land ▶ Conflict between planning scheme provisions and the expectations of industry ▶ Physical constraints such as native vegetation, waterways and drainage corridors and good quality agricultural land ▶ Industrial land in close proximity to residential areas eg Norbank Estate Special Use, Parkhurst Industrial limiting expansion of heavy industry and Tanby Road Yeppoon ▶ Parkhurst Industrial Area issues unacceptable grade, existing tenure, environmental constraints (flooding, waterways, remnant vegetation), Native Title claims, poor transport connectivity between industry and the Bruce Highway (access to rural industries to the west) ▶ Limited information on local area trends and constraints (natural hazards, environmental mapping of flooding / drainage areas for the Gracemere–Stanwell Corridor ▶ Vacant land not available for sale or development and land banking ▶ Failure to receive funding for major infrastructure upgrades necessary to facilitate regional development



3. Industrial Land Demand

The following provides an overview of the industrial land demand estimates projected for the Rockhampton Region. The full report prepared by Economic Associates has been provided in **Appendix A** and describes the process for obtaining these demand estimates in detail.

It is important to note, that industrial land demand estimates for this Study have been derived from a traditional population based demand model. In view of the expansion of the resource industry within the Region, a production based demand model may indicate the need for additional industrial land. Notwithstanding this, the Rockhampton Region has sufficient supply of industrial land to accommodate additional land requirements over and above those indicated in the following analysis.

3.1 Gross Incremental Demand Estimates

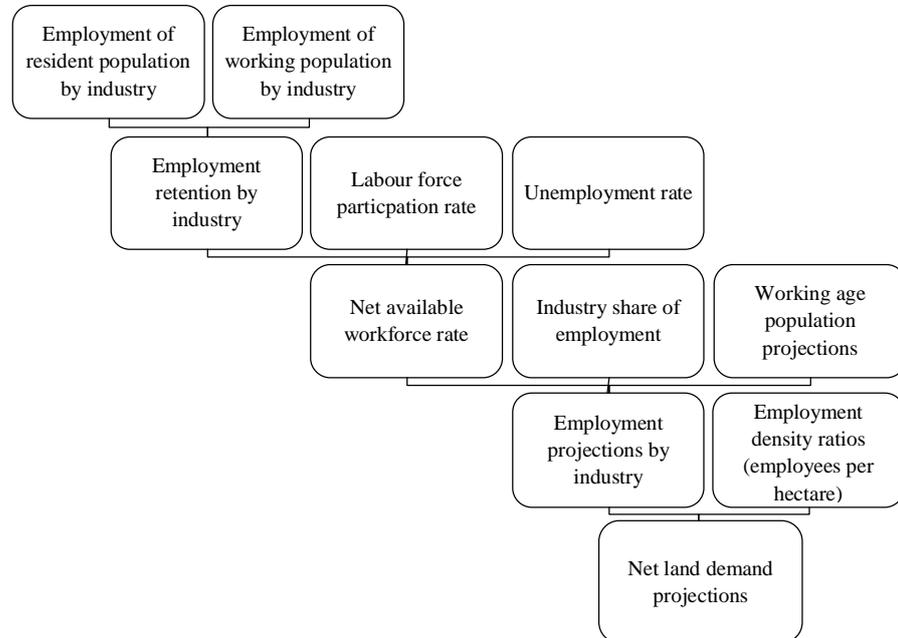
Gross industrial land demand projections are derived through the following calculations:

- ▶ Prepare employment projections for industrial sectors that utilise industrial land.
- ▶ Divide employment projections by employment density ratios to obtain net (or allotment) industrial land demand projections.
- ▶ Multiply net industrial land demand projections by allowances for roads, infrastructure services and open space areas to obtain gross industrial land demand projections.

The gross incremental land demand, that demand post 2010, represents future demand or demand over and above land already taken up for industrial uses. Incremental land demand can also be described as the land take-up rate.

Figure 3-1 below illustrates the process of converting employment projections to land demand projections as described above.

Figure 3-1 Process of Converting Employment Projections to Land Demand Projections



Employment density ratios were determined through consultation with State government departments and agencies, local governments, industry (or industrial land users) and property developers and agencies. For the purpose of this analysis, the assumed employment densities have been kept constant throughout the projection period. The employment densities adopted for this Study are as follows:

- ▶ Low Impact Industry - 28 employees / hectare;
- ▶ Medium Impact Industry - 18 employees / hectare;
- ▶ High Impact Industry - 33 employees / hectare; and
- ▶ Noxious & Hazardous Industry - 30 employees / hectare.

As stated above gross land demand equals net industrial land demand (i.e. industrial allotment demand) plus allowances made for roads, services and open space. The requirement for roads and service reserves varies between regions and type of land use. The Department of Business, Industry and Regional Development's (DBIRD)¹ information paper on *Establishing Future Business and Industry Land Requirements and Identifying Strategically Important Sites* indicates that industrial areas require the equivalent of between 5% and 10% of total allotment area for the provision of road and service corridors, and the equivalent of between 30% and 40% of total allotment area for open space and buffers².

¹ The Department of Business, Industry and Regional Development was a predecessor to the Department of State Development, Trade and Innovation.

² Informed by DBIRD (early 1990s) and consultations with Property Services Group (2010)



Large footprint and general industry uses, and those reliant on heavy vehicle access, are anticipated to require greater provision for roads, reserves and buffers than lower impact areas, such as service industry precincts. The assumptions used in estimating the industrial land requirement over and above allotment areas are as follows:

- ▶ Low impact industry - services 5%, open space – 25%;
- ▶ Medium impact industry - services 10%, open space – 35%;
- ▶ High impact industry - services 12.5%, open space – 40%; and
- ▶ Noxious and hazardous industry - services 12.5%, open space – 40%.

The following provides summary tables of gross incremental demand firstly by sub area and then by industry category level 2 zones (in accordance with QPP version 2.0) for five year periods up until 2031. Complete tables showing gross incremental demand estimates by sub area and industry zones have been provided in **Appendix B**.

3.2 Gross Incremental Demand per Sub Area

Table 3-1 provides the gross incremental land demand estimates for the Rockhampton Region per sub area for five year periods up until 2031. By 2031, there is an estimated demand for 180 hectares of industrial land. From a spatial point of view, the majority of this demand is expected to be experienced in the following key sub areas:

- ▶ Rockhampton:
 - Parkhurst Kawana Industrial Area 58 ha;
 - South Rockhampton Industrial 10 ha; and
 - North Rockhampton Industrial 4 ha;
- ▶ Fitzroy:
 - Stanwell Industrial Corridor (Precincts C-J) 54 ha;
- ▶ Livingstone:
 - Yeppoon and Surrounds 21 ha; and
 - Livingstone Rural Balance 15 ha.

In terms of sequencing, 94 ha or 53.9% of this demand, is expected by 2021. In particular, this is emphasised in the Rockhampton City Planning Area, where a total of 81 ha is expected by 2031, 38 ha (46.9%) of this total demand is required by 2016 and 51 ha (63%) is required by 2021. Therefore, in order to accommodate this demand, industrial land needs to be available for development in these sub areas, or in sub areas which can service these sub areas, in the short term (5 – 10 years).

Table 3-1 Gross Incremental Demand per Sub Area (ha)

Sub Area	2011	2016	2021	2026	2031
Rockhampton					
Airport	0	0	1	1	1



Sub Area	2011	2016	2021	2026	2031
CBD	0	0	1	1	1
North Rockhampton Balance	0	0	0	0	0
North Rockhampton Commercial Corridor	0	1	1	2	2
North Rockhampton Industrial	1	2	3	3	4
North Rockhampton Residential	0	0	1	1	1
Parkhurst Kawana Industrial Area	8	27	37	47	58
South Rockhampton Industrial	1	5	6	8	10
South Rockhampton Balance	0	0	1	1	1
South Rockhampton Commercial Corridor	0	1	1	2	2
South Rockhampton Residential	0	0	1	1	1
<i>Rockhampton Total</i>	<i>11</i>	<i>38</i>	<i>51</i>	<i>65</i>	<i>81</i>
Fitzroy					
Gracemere (includes Gracemere Township, Precincts A & B)	0	0	1	2	3
Stanwell Industrial Corridor (includes Precincts C - J)	2	8	21	36	54
Fitzroy Rural (includes Special Industrial Zone)	0	0	1	2	3
<i>Fitzroy Total</i>	<i>2</i>	<i>8</i>	<i>23</i>	<i>40</i>	<i>61</i>
Livingstone					
Emu Park & Surrounds	0	0	0	0	0
Kinka Beach & Surrounds	0	0	1	1	2
Livingstone Rural Balance	1	4	8	12	15
The Caves / Rockyview	0	0	0	0	0
Yeppoon & Surrounds	2	6	11	16	21
<i>Livingstone Total</i>	<i>3</i>	<i>11</i>	<i>20</i>	<i>29</i>	<i>38</i>
Mount Morgan					
Mount Morgan Township	0	0	1	1	1
Mount Morgan Rural	0	0	0	0	0
<i>Mount Morgan Total</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>1</i>



Sub Area	2011	2016	2021	2026	2031
Rockhampton Region					
Rockhampton Region Total	15	57	94	135	180

3.3 Gross Incremental Demand per Industry Zone

Table 3-2 provides the gross incremental land demand estimates for the Rockhampton Region for the following industry category level 2 zones (in accordance with QPP version 2.0):

- ▶ Low Impact Industry;
- ▶ Medium Impact Industry;
- ▶ High Impact Industry; and
- ▶ Noxious and Hazardous Industry.

As it is not likely that there will be demand for marine or ‘high technology’ industrial uses in the Rockhampton Region to 2031, the Waterfront and Marine Industry and High Technology Industry zones have not been included in these estimates. In addition, as demand is dependant on the availability of a resource (rather than employment densities), there is also no demand estimates for the Industry Investigation and Extractive Industry zones.

Across the Rockhampton Region, the majority of the estimated demand is for both medium impact industry (37.8%) and low impact industry (31.7%). This is evident in all planning areas, except for Livingstone where 55.3% of the expected demand is for low impact industry. In terms of industrial land supply, approximately 125 ha (69.4%) of industrial land available for development therefore needs to be suitable for low and medium impact industry uses. Such suitable characteristics would include:

- ▶ Close proximity to the population it is servicing;
- ▶ Close proximity to transportation networks for distribution to the market;
- ▶ Subdivided appropriately for example 1,000m² – 2,000m² lots for low impact industry and 2,000m² – 10,000m² for medium impact industry;
- ▶ Serviced land to enable viability when establishing such uses; and
- ▶ Relatively unconstrained land due to high site coverage requirements.

Table 3-2 Gross Incremental Demand per Industry Zone (ha)

Zone	2011	2016	2021	2026	2031
Rockhampton					
Low Impact Industry	4	12	14	16	18
Medium Impact Industry	5	16	23	31	39



Zone	2011	2016	2021	2026	2031
High Impact Industry	1	4	6	8	11
Noxious & Hazardous Industry	2	6	8	10	13
<i>Total</i>	<i>11</i>	<i>38</i>	<i>51</i>	<i>65</i>	<i>81</i>
Fitzroy					
Low Impact Industry	1	2	7	12	17
Medium Impact Industry	1	4	9	16	23
High Impact Industry	0	1	3	5	8
Noxious & Hazardous Industry	0	2	5	8	13
<i>Total</i>	<i>2</i>	<i>8</i>	<i>23</i>	<i>40</i>	<i>61</i>
Livingstone					
Low Impact Industry	1	5	10	15	21
Medium Impact Industry	1	2	3	5	6
High Impact Industry	1	2	3	4	5
Noxious & Hazardous Industry	1	2	3	5	6
<i>Total</i>	<i>3</i>	<i>11</i>	<i>20</i>	<i>29</i>	<i>38</i>
Mount Morgan					
Low Impact Industry	0	0	0	0	1
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
<i>Total</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>1</i>
Rockhampton Region					
Low Impact Industry	5	19	31	43	57
Medium Impact Industry	6	22	36	51	68
High Impact Industry	2	7	12	18	24
Noxious & Hazardous Industry	2	9	16	23	32
<i>Total</i>	<i>15</i>	<i>57</i>	<i>94</i>	<i>135</i>	<i>180</i>



4. Industrial Land Supply

4.1 Industrial Land Supply per Sub Area

An industrial land audit was undertaken of existing industrial zoned land within the Rockhampton Region as defined by the respective planning scheme zoning maps. The purpose of the audit was to identify the remaining vacant industrial land within the Region.

In order to define how much land is realistically available for further development, the audit was further refined to exclude land affected by particular site constraints and therefore considered 'undevelopable'. The following physical constraints were considered in this assessment:

- ▶ Within a Directory of Important Wetland;
- ▶ Endangered or Of Concern Regional Ecosystems;
- ▶ Essential Habitat under the *Vegetation Management Act 1999*;
- ▶ State and Regional Habitat for EVR;
- ▶ Within 50m of a waterway (stream order above 5);
- ▶ Land which has a slope greater than 10%;
- ▶ Flood prone land (below Q100 flood event level); and
- ▶ Great Barrier Reef Wetland Areas.

The results of this audit and subsequent constraints analysis were then mapped and are shown on **Figure 4-1 – Figure 4-5**. The distribution of existing industrial land supply and developable vacant industrial land are summarised in the following sections.

It should be noted that the inventory of available industrial land is based on an assessment of the physical capability of vacant zoned land. There are likely to be instances where some of these areas are not readily serviceable or are no longer suitably located due to changes in land use because of other encroaching development or are held by owners who may not wish to develop. Discussions were held with RRC officers in an attempt to identify some of these constraints and have been discussed in the following sections.

The following provides a summary of the existing industrial land supply for the Rockhampton Region and its component Planning Areas. An assessment of each of the industrial areas across the Region has been completed and is provided in **Appendix C**.

4.1.1 Rockhampton Region

There is an estimated 1,675 ha of vacant industrial land supply within Rockhampton Region, of which 1,122 ha is considered developable (refer to **Table 4-1**). Key supply areas include Gracemere-Stanwell Industrial Precinct (941 ha) and Parkhurst Industrial



Area (163 ha). Across the Region, regional flooding and drainage issues are the most constraining factors.

Table 4-1 Existing Industrial Land Supply for Rockhampton Region (ha)

Planning Area	Industrial Land Supply	Vacant Land	Developable Land
Rockhampton	873	266	171
Fitzroy	2,654	1,401	945
Livingstone	80	8	6
Mount Morgan	2	0	0
Rockhampton Region	3,609	1,675	1,122

4.2 Rockhampton City Planning Area

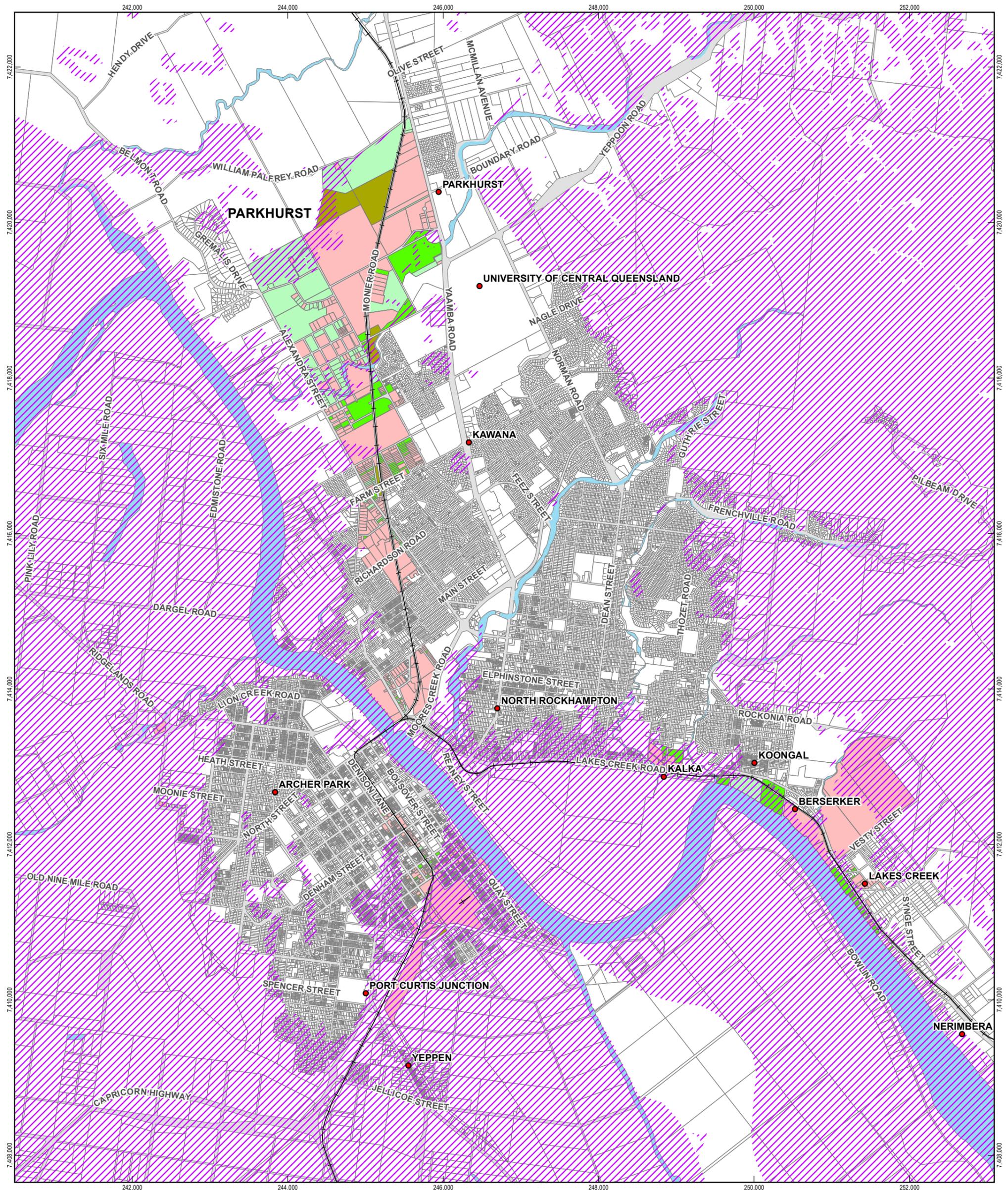
Rockhampton has an estimated 266 ha of vacant industrial land, of which 171 ha is considered developable (refer to **Table 4-2**). The predominant constraint of vacant land in Rockhampton is regional flooding and drainage problems (refer to **Figure 4-1** and **Figure 4-2**).

Parkhurst Industrial Area is a key supply area for the Region, providing 163 ha of developable vacant land. Parkhurst however, presents a sequencing issue as 106 ha is currently considered restricted due to tenure, Native Title, drainage and infrastructure provision (access and stormwater) issues. These issues will need to be resolved prior to the land being available for development.

Land in Parkhurst is currently being used for a mix of industrial uses including low, medium and higher impact uses. Due to the existing settlement pattern and proposed residential developments encompassing Parkhurst, residential encroachment is threatening the continued use of this area for higher impact uses, and the Area may see a transition to the lower impact uses.

Despite the existing zoning allocations, a majority of the industrial areas in Rockhampton are also facing similar land use conflicts due to either abutting residential areas (eg Norbank Estate Special Use, Park Avenue Industrial) or comprising a considerable mix of industrial, commercial and residential uses inherent from encroachment and /or existing and historical uses (eg South Rockhampton Low Impact, Central Business District Commercial).

Within the Rockhampton City, there are also significant industrial uses or expanding / new industrial areas currently not zoned industrial (eg warehousing and storage operations in Depot Hill, Hastings Deering at Port Curtis and Peak Hill Quarry). Council has also identified the issue of the presence of illegal uses, namely industrial uses operating without a lawful development approval. These uses occur in various localities across the city, also typically outside formal industrial zones. Consideration will need to



LEGEND

- Place Name
- Rail
- ▨ Developable Land Constraint
- ▭ Cadastre
- ▭ Road
- ▭ Waterway
- ▭ Rockhampton Industrial Land
 - ▭ Not Vacant
 - ▭ Vacant - House / Constrained
 - ▭ Vacant Land
 - ▭ Vacant Land - Rails

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1:45,000 (at A3)

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 56

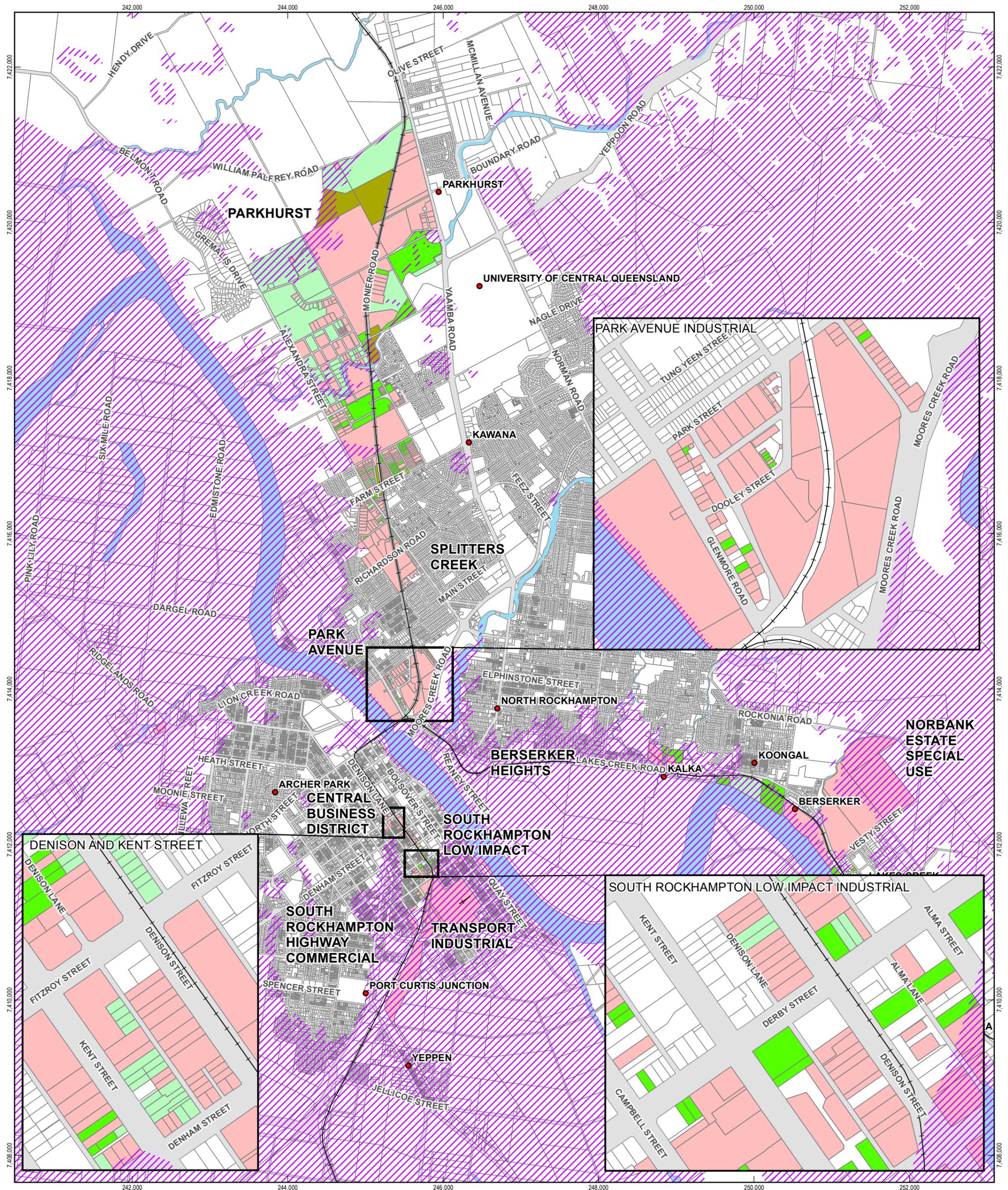


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Revision | A
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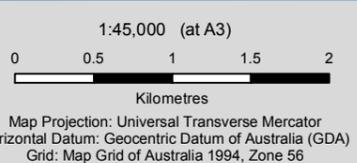
Figure 4-1



- LEGEND**
- Place Name
 - Rail
 - ▨ Developable Land Constraint
 - ▭ Cadastre
 - ▭ Road
 - ▭ Waterway
 - ▭ Rockhampton Industrial Land
 - ▭ Not Vacant
 - ▭ Vacant - House / Constrained
 - ▭ Vacant Land
 - ▭ Vacant Land - Rails

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Figure 4-2

be given to these uses in terms of the proposed QPP industry zones, for example a mixed use zone may be appropriate or relocation of these uses to existing industrial areas.

Table 4-2 Industrial Land Supply for Rockhampton City Planning Area (ha)

Industrial Area <i>Sub Area</i>	Industrial Land Supply	Vacant Land	Developable Land
Airport Special Use <i>Airport</i>	3	0	0
Berserker Heights Residential <i>North Rockhampton Residential</i>	10	3	0
Central Business District Commercial <i>CBD</i>	10	2	2
Norbank Estate Special Use <i>North Rockhampton Residential</i>	158	26	2
Park Avenue Industrial <i>North Rockhampton Industrial</i>	69	1	1
Parkhurst Industrial <i>Parkhurst Kawana Industrial Corridor</i>	532	227	163
South Rockhampton Low Impact Industrial <i>CBD, South Rockhampton Industrial & South Rockhampton Commercial Corridor</i>	20	6	2
Splitlers Creek Residential <i>Parkhurst Kawana Industrial Corridor</i>	13	1	1
Transport Industrial <i>South Rockhampton Industrial</i>	59	0	0
Rockhampton	873	266	171

4.3 Fitzroy Planning Area

The Gracemere-Stanwell Industrial Precinct is the key supply area within Fitzroy and the Region, offering 941 ha of the total 945 ha of developable vacant land (refer to **Table 4-3**). The Gracemere-Stanwell Industrial Precinct comprises 10 Precincts (A – J) stretching along the Capricorn Highway from Gracemere township to Stanwell Power Station (refer to **Figure 4-3**). The Precinct also comprises an area of ‘Village Balance’ referred to as Precinct K which surrounds the business and industrial precincts.

Regional flooding and drainage issues are a significant problem for industrial development within a number of the precincts, along with the lack of provision of



reticulated services and significant access issues related to the crossing of the railway line. An overpass is currently being investigated by Department of Transport and Main Roads to address the access issue.

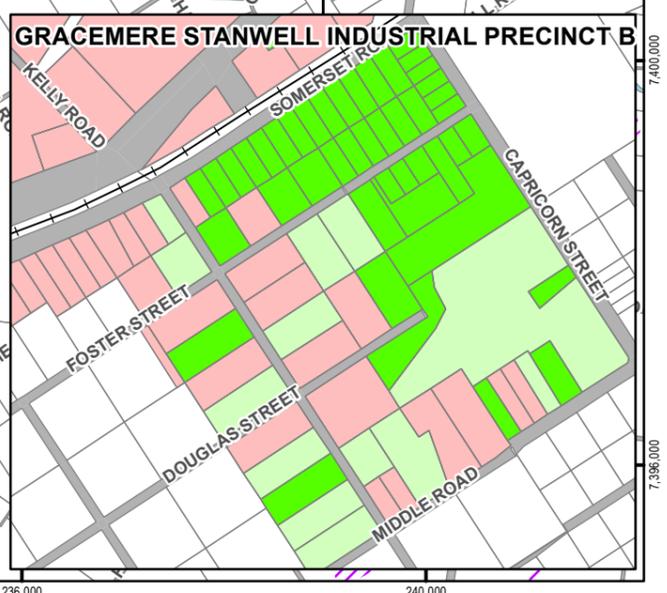
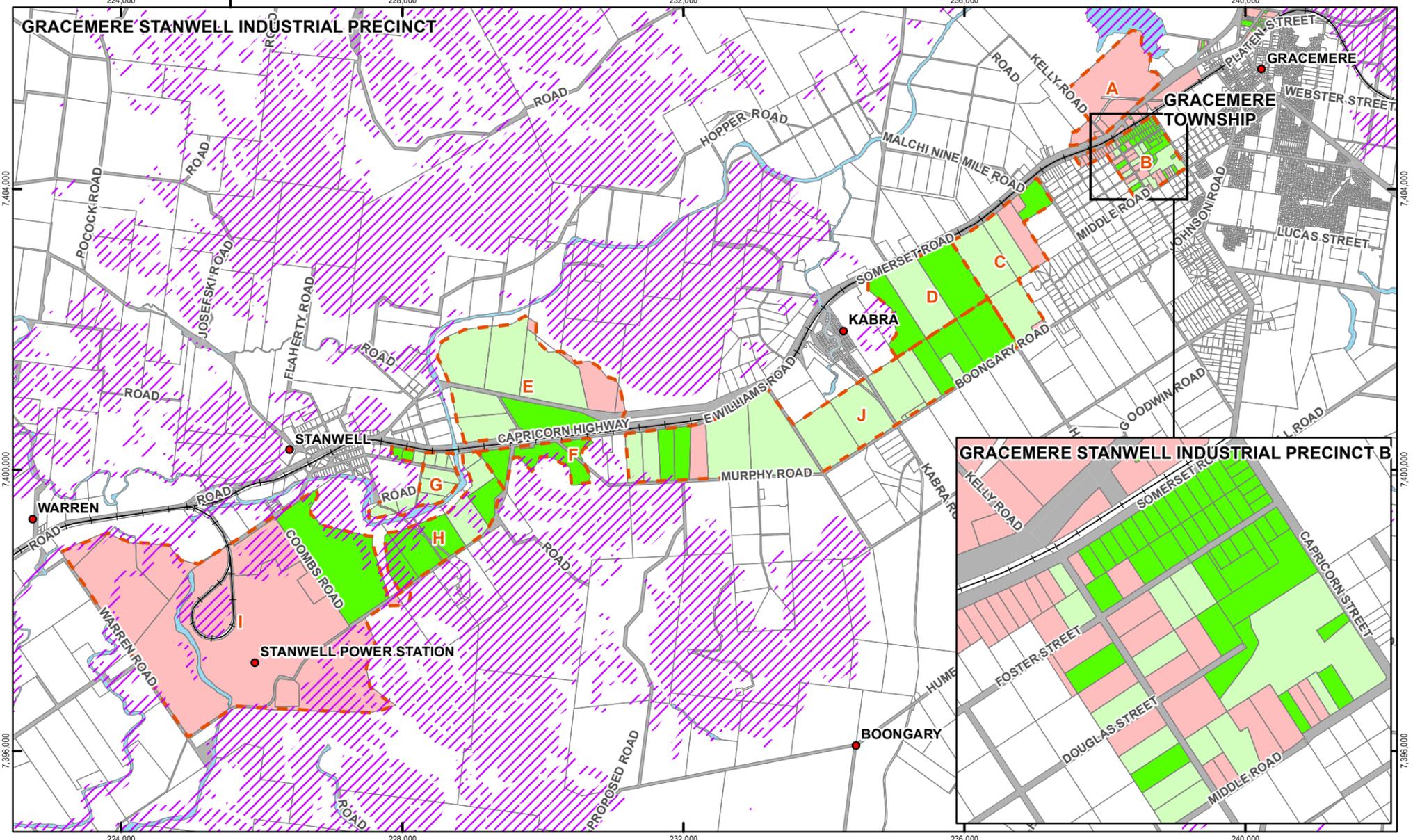
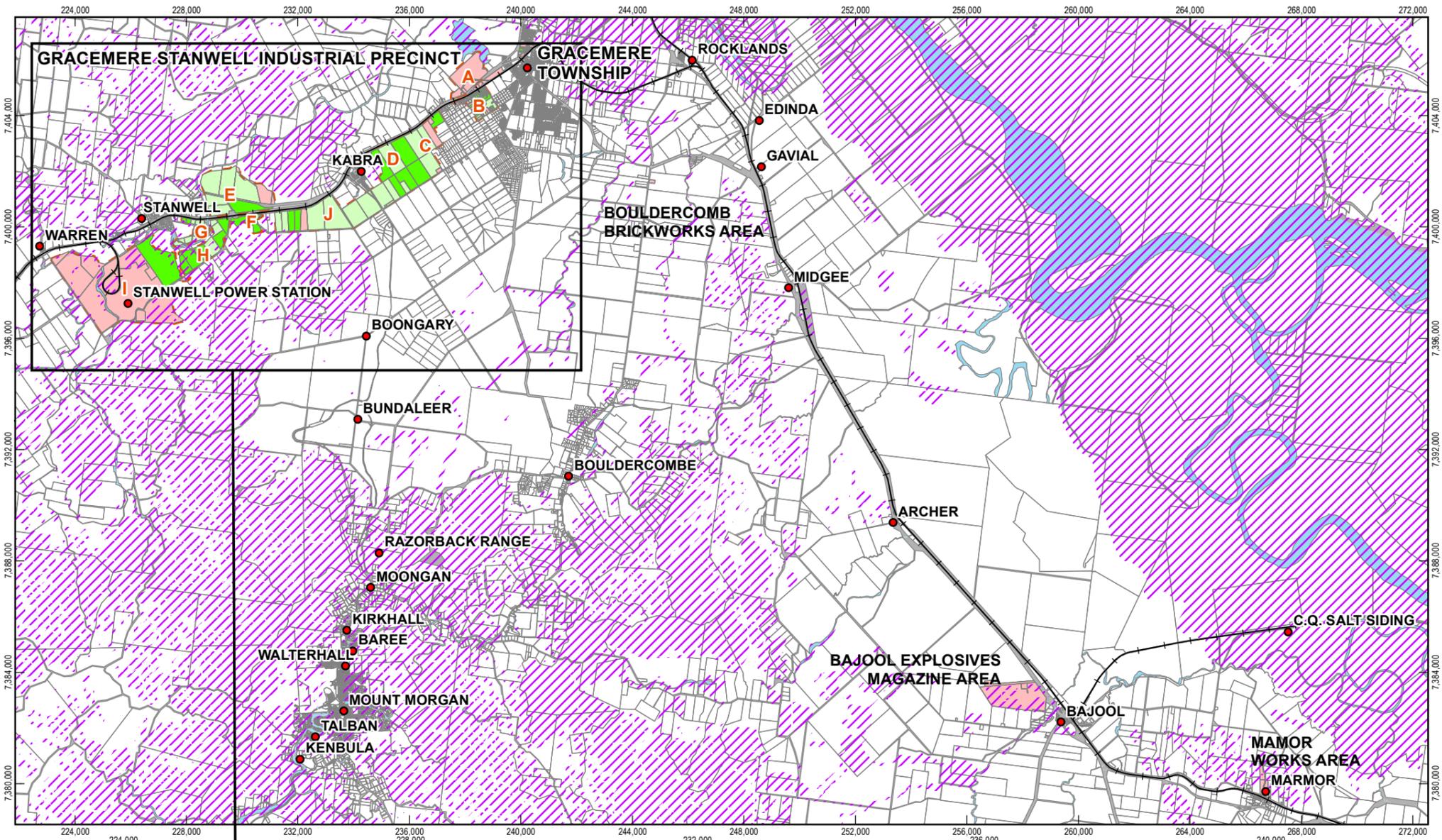
As Precinct K surrounds Precincts A - J, rural residential areas of Gracemere, Kabra and Stanwell are inherently dispersed throughout and sometimes in between the business and industrial precincts. This presents a land use conflict to existing and future industrial uses due to the close proximity of sensitive uses and the requirement to travel through residential areas to access the highway.

Rural servicing industries, for example truck depots, are also prevalent in Precinct K particularly between Precincts B and C. Clearly this reflects a mismatch between the existing planning provisions and the ability to cater for this type of demand. The future zoning of these areas therefore need to be a consideration to dispel 'out of zone' development. As for Rockhampton, consideration may need to be given to the use of more general mixed use zones that provide greater flexibility for these rural servicing industries.

The Fitzroy Planning Area also comprises some other significant operations including Bouldercombe Brickworks, Marmor Works Area (limeworks), Cheetham Salt and quarries at Pink Lily Sands, Stanwell and Marmor. The Bajool Explosive Magazine Area is also located in the Fitzroy Planning Area and is one of two such facilities in Queensland. Due to the significance of this industrial activity and the inherent land use and environmental impacts, this Area needs to be protected from encroachment of sensitive uses through adequate separation and buffering. There is an opportunity for industrial uses which have a synergy with the existing use, but will also act as a buffer protecting the Bajool Explosive Magazine Area from incompatible uses.

Table 4-3 Industrial Land Supply for Fitzroy Planning Area (ha)

Industrial Area Sub Area	Industrial Land Supply	Vacant Land	Developable Land
Gracemere-Stanwell Industrial Precinct <i>Stanwell Industrial Corridor</i>	2,395	1,397	941
Gracemere Township Industrial <i>Gracemere</i>	32	4	4
Special Industrial <i>Fitzroy Rural</i>	222	0	0
Strategic Port Land <i>Fitzroy Rural</i>	5	0	0
Fitzroy	2,654	1,401	945



- Legend**
- Place Name
 - Rail
 - ▨ Developable Land Constraint
 - ▭ Cadastre
 - ▭ Road
 - ▭ Waterway
 - ▭ Fitzroy Industrial Land
 - ▭ Not Vacant
 - ▭ Vacant - House / Constrained
 - ▭ Vacant Land

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1:180,000 (at A3)

0 2.5 5
Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 56



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Figure 4-3

4.4 Livingstone Planning Area

Livingstone has an estimated 8 ha of vacant industrial land of which 6 ha is considered developable (refer to **Table 4-4** and **Figure 4-4**). Vacant industrial land in Livingstone is generally unconstrained, however due to its location at the gateway to Yeppoon and Emu Park, visual amenity is a significant concern for these Areas.

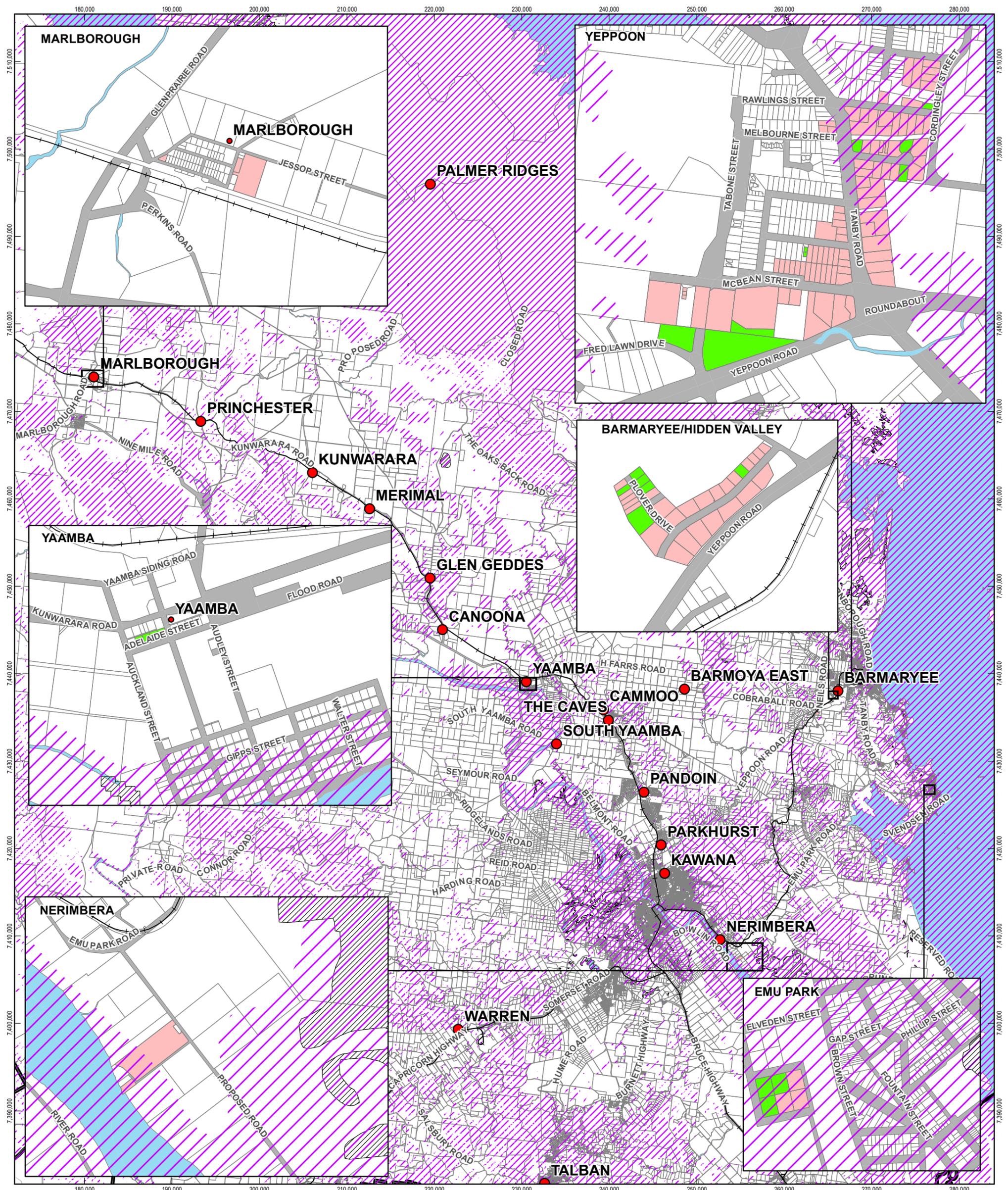
There are areas in Livingstone however not captured in this inventory, which are approved for industrial development. These areas include for example Hidden Valley and the 'Pineapple Patch' along Yeppoon Road and Manns Road near Emu Park. In addition, there are some extractive activities including QMAG Magnesite Mine near Kunwarara and two gravel quarries near Nerimbera. Consideration of the future zoning of these areas as industrial land is therefore necessary.

Table 4-4 Industrial Land Supply for Livingstone Planning Area (ha)

Industrial Area Sub Area	Industrial Land Supply	Vacant Land	Developable Land
Barmaryee & Bondoola <i>Livingstone Rural Balance</i>	26	2	2
Emu Park <i>Livingstone Rural Balance</i>	5	2	0
Marlborough <i>Livingstone Rural Balance</i>	5	0	0
Nerimbera <i>Livingstone Rural Balance</i>	24	0	0
Yaamba <i>Livingstone Rural Balance</i>	1	1	1
Yeppoon <i>Yeppoon & Surrounds</i>	18	4	3
Livingstone	80	8	6

4.5 Mount Morgan Planning Area

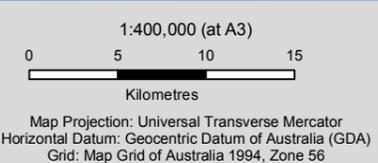
Mount Morgan Planning Scheme does not currently include an industrial zone. Existing industrial uses occupy 2.3 ha (refer to **Table 4-5** and **Figure 4-5**).



- LEGEND**
- Place Name
 - Rail
 - Cadastre
 - Road
 - Livingstone Industrial Land
 - Not Vacant
 - Vacant - House / Constrained
 - Vacant Land
 - Developable Land Constraint
 - Great Barrier Reef Wetland
 - Waterway

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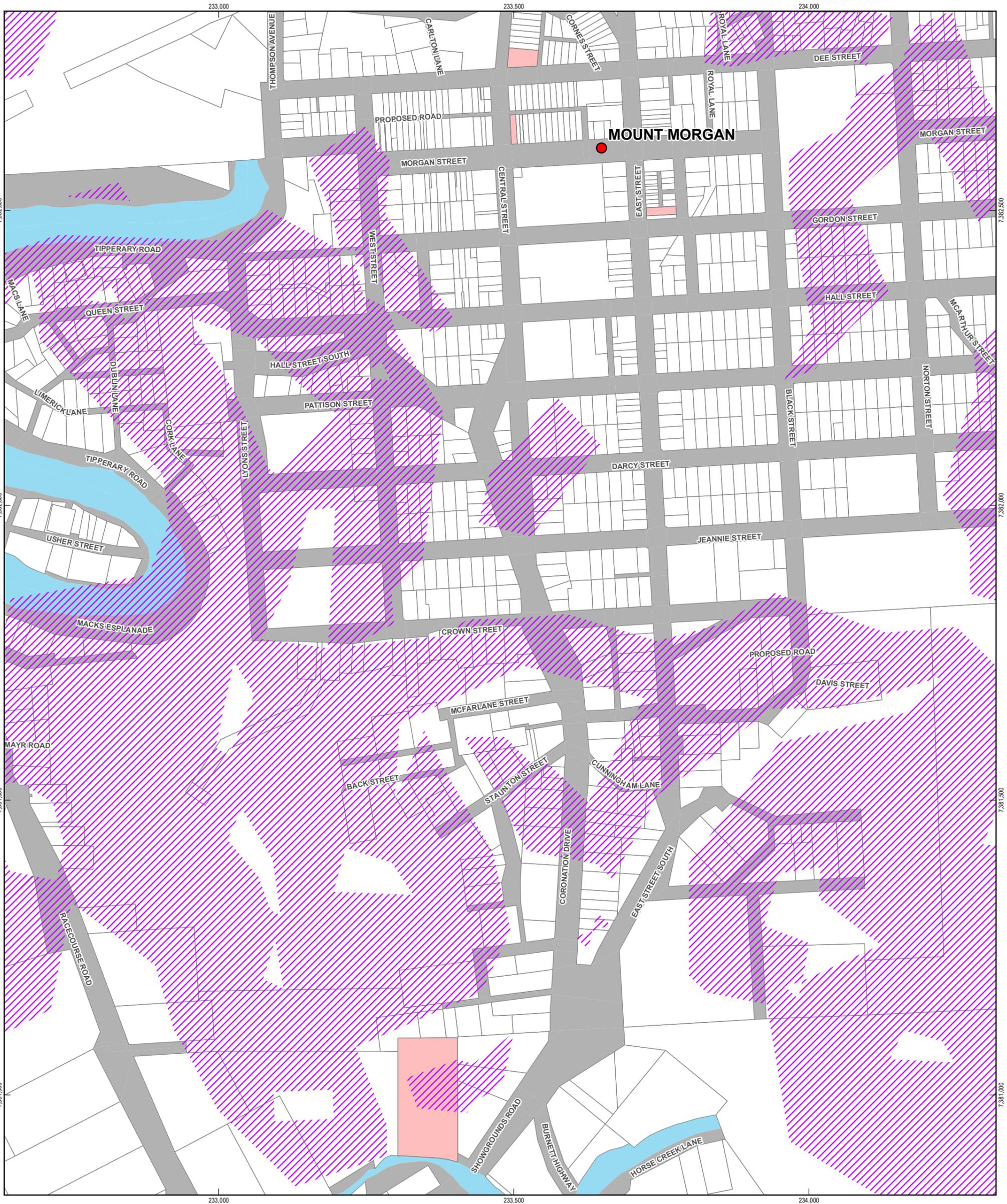


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Livingstone Industrial Vacant Land Audit

Figure 4-4

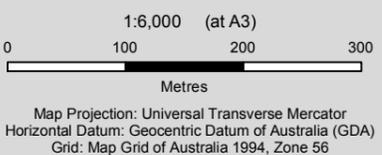


LEGEND

- Place Name
- Rail
- Developable Land Constraint
- Cadastre
- Road
- Waterway
- Mount Morgan Industrial Land
- Not Vacant

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Industrial Vacant Land Audit**

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Figure 4-5



Table 4-5 Industrial Land Supply for Mount Morgan Planning Area (ha)

Industrial Area Sub Area	Industrial Land Supply	Vacant Land	Developable Land
Mount Morgan Township <i>Mount Morgan Township</i>	2	0	0
Mount Morgan	2	0	0

4.6 Industrial Land Supply per Zone

In order to establish the existing industrial land supply per zone, it was necessary to translate the current planning scheme zoning systems into the zoning framework provided by the QPP. As identified previously (refer to section 2.1.1), the QPP are a set of standard planning scheme provisions that RRC need to use to develop the RRPS. Any study seeking to provide strategic direction for a new planning scheme should be aligned with the strategic outcomes, zones, definitions and codes contained within the QPP.

As directed by RRC, it is proposed to adopt Level 2 zones of the Industry category which consist of the following:

- ▶ Low Impact Industry;
- ▶ Medium Impact Industry;
- ▶ High Impact Industry;
- ▶ Noxious and Hazardous Industry;
- ▶ Waterfront Marine Industry;
- ▶ High Technology Industry; and
- ▶ Industry Investigation.

It is also proposed to use Extractive Industry from the Other category.

RRC has previously undertaken an exercise to translate the current planning scheme zoning systems into the zoning framework provided by QPP. A review of this translation was carried out, the results of which are presented in **Table 4-6** and **Figure 4-6 - Figure 4-9**. When considering the appropriate zone for each industrial area, the review took into consideration the following:

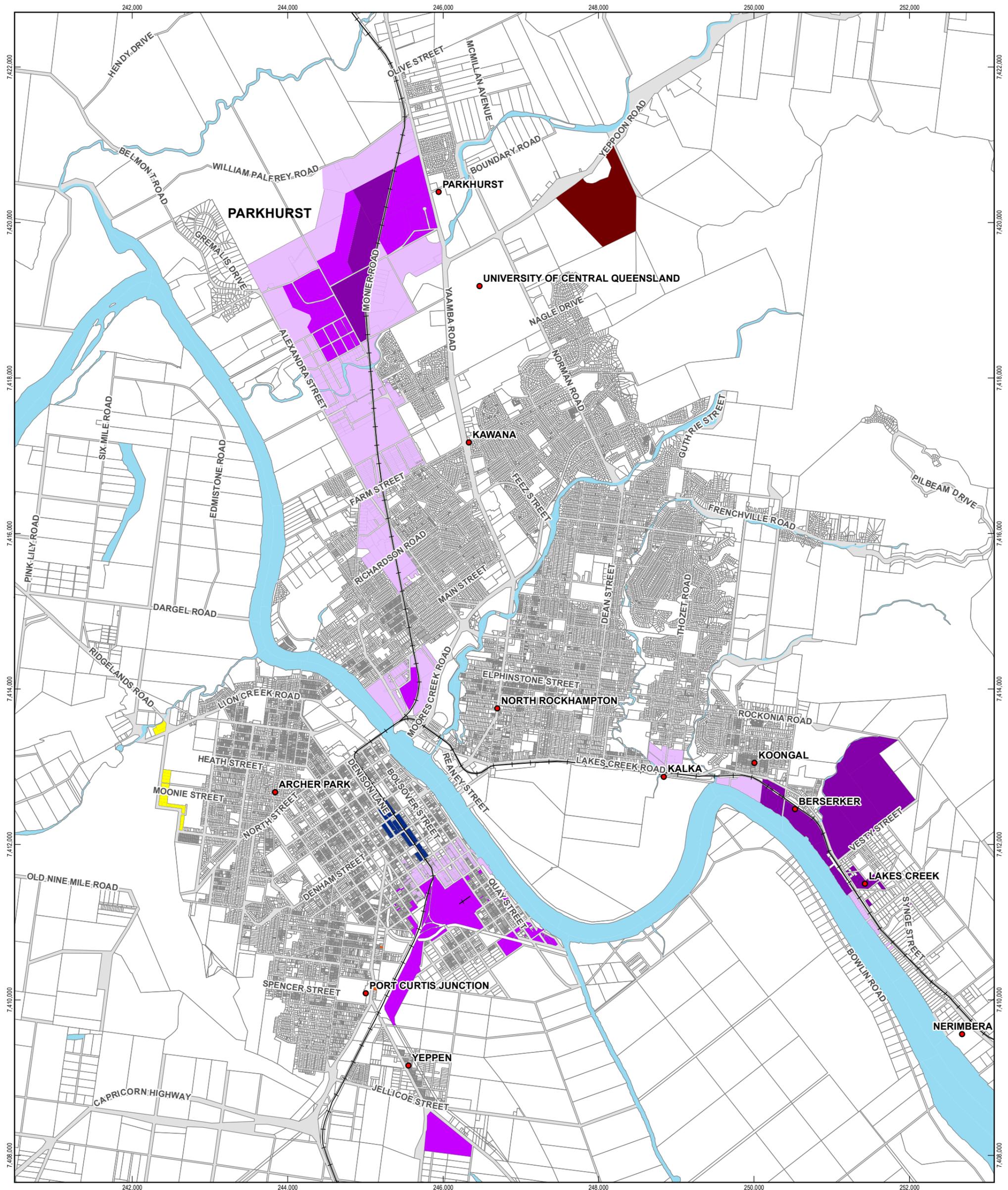
- ▶ the locality of the industrial area in the Region;
- ▶ existing industrial uses operating in the area;
- ▶ the nature of surrounding land uses and proximity to sensitive uses, including land use conflicts discussed above;
- ▶ lot sizes and configuration;
- ▶ existing and proposed infrastructure; and



- ▶ physical characteristics and constraints of the subject land.

There were some variations to the proposed RRC translation of particular note and include:

- ▶ A reduction in the Parkhurst Industrial Area high impact industry zone, to reflect the required transition of the Area (due to encroachment of sensitive uses) from higher impact to low and medium impact uses;
- ▶ The Transport Industrial Area is proposed to be zoned medium impact (rather than low impact) to reflect the current operation of the site a significant rail facility; and
- ▶ Industrial land at Nerimbera is proposed to be zoned high impact, also to reflect the current industrial operation of this site for food processing.

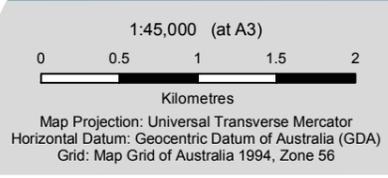


LEGEND

● Place Name	▭ Cadastre	▭ Proposed Zone	▭ High Impact Industry
—+— Rail	▭ Road	▭ Principal Centre	▭ Extractive Industry
	▭ Waterway	▭ Low Impact Industry	▭ Community Purposes
		▭ Medium Impact Industry	▭ Mixed Use

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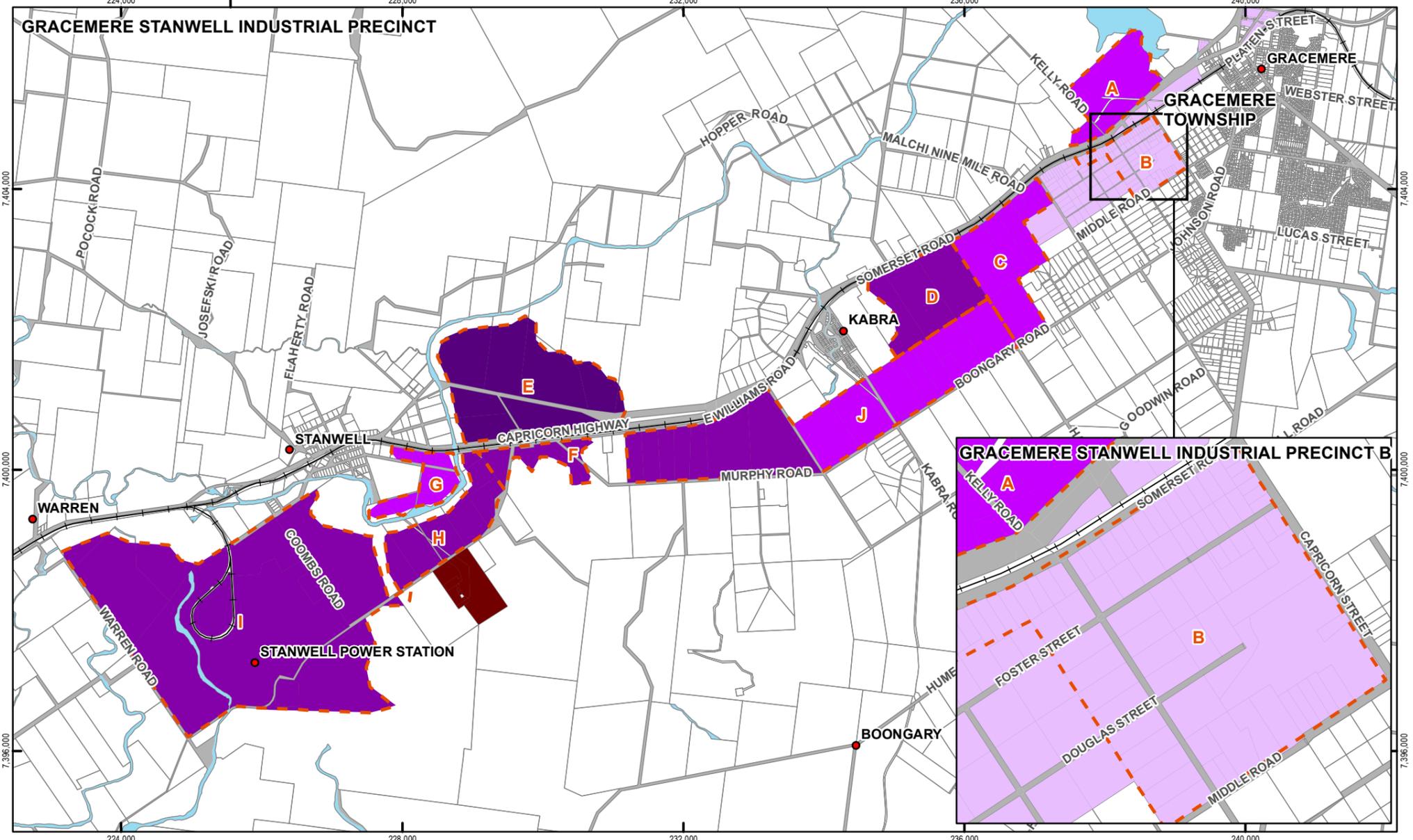
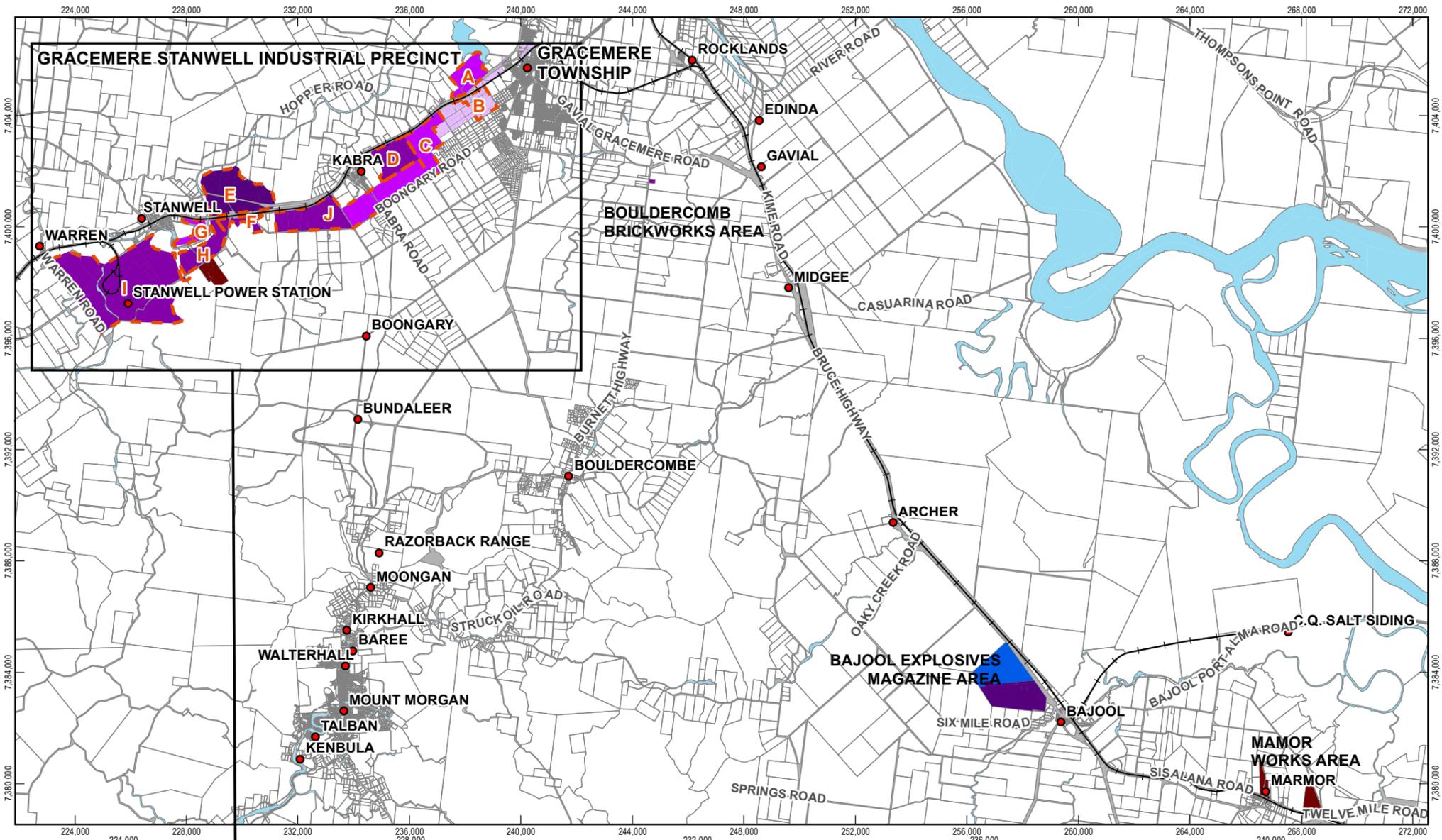
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**Rockhampton
Proposed Industrial Zoning Framework Figure 4-6**



- Legend**
- Place Name
 - Rail
 - ▭ Precincts
 - ▭ Road
 - ▭ Waterway
 - ▭ Cadastre
 - ▭ Proposed Zone
 - ▭ Low Impact Industry
 - ▭ Medium Impact Industry
 - ▭ High Impact Industry
 - ▭ Noxious and Hazardous Industry
 - ▭ Extractive Industry
 - ▭ Industry Investigation

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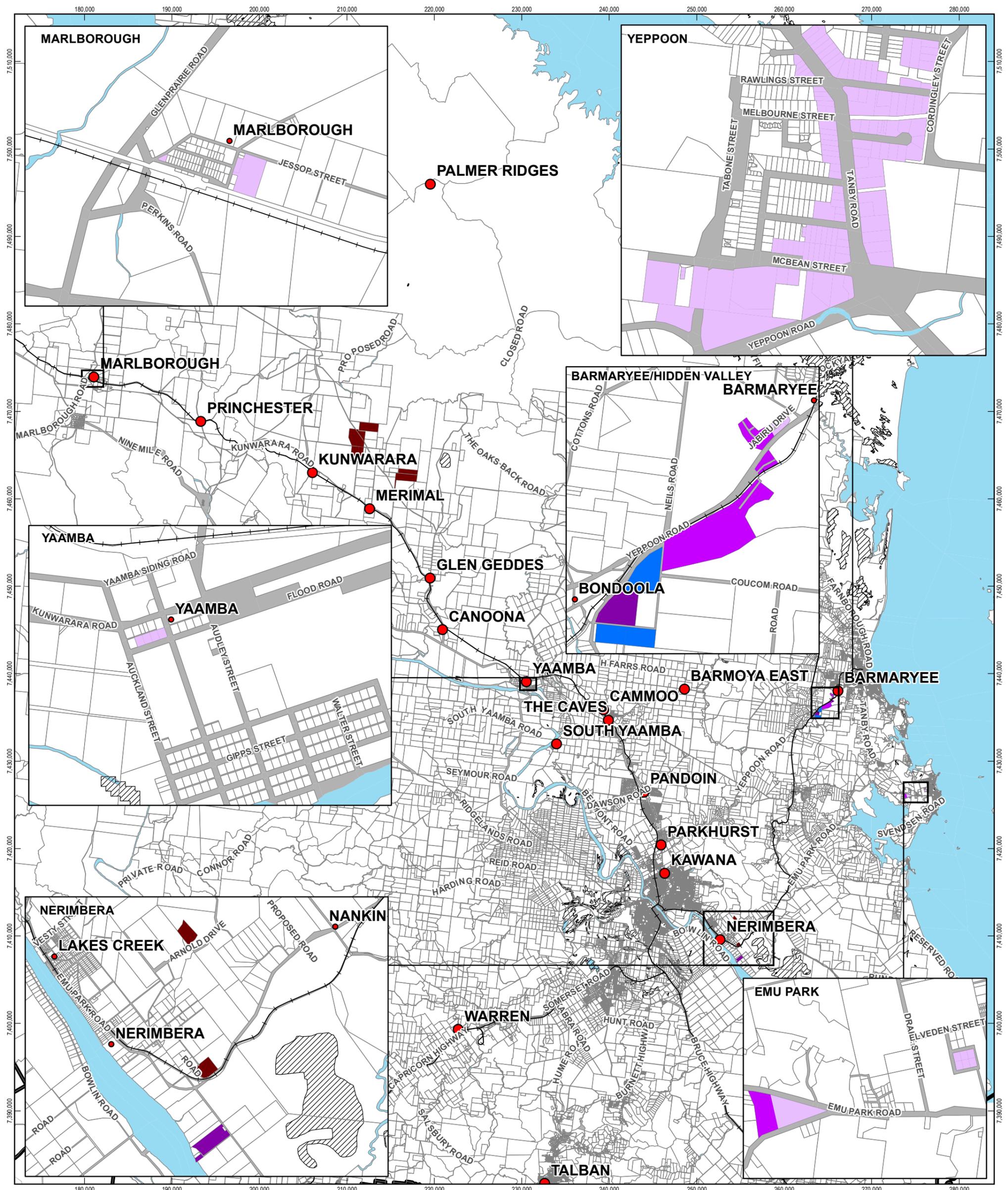
Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 56

Rockhampton Regional Council
Industrial Land Use Study

Fitzroy
Proposed Industrial Zoning Framework

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LEGEND

- | | | | |
|--------------|------------------------------|--------------------------|--------------------------|
| ● Place Name | ▭ Cadastre | ▭ Proposed Zone | ▭ Extractive Industry |
| — Rail | ▭ Road | ▭ Low Impact Industry | ▭ Industry Investigation |
| ▭ Waterway | ▭ Great Barrier Reef Wetland | ▭ Medium Impact Industry | |
| | | ▭ High Impact Industry | |

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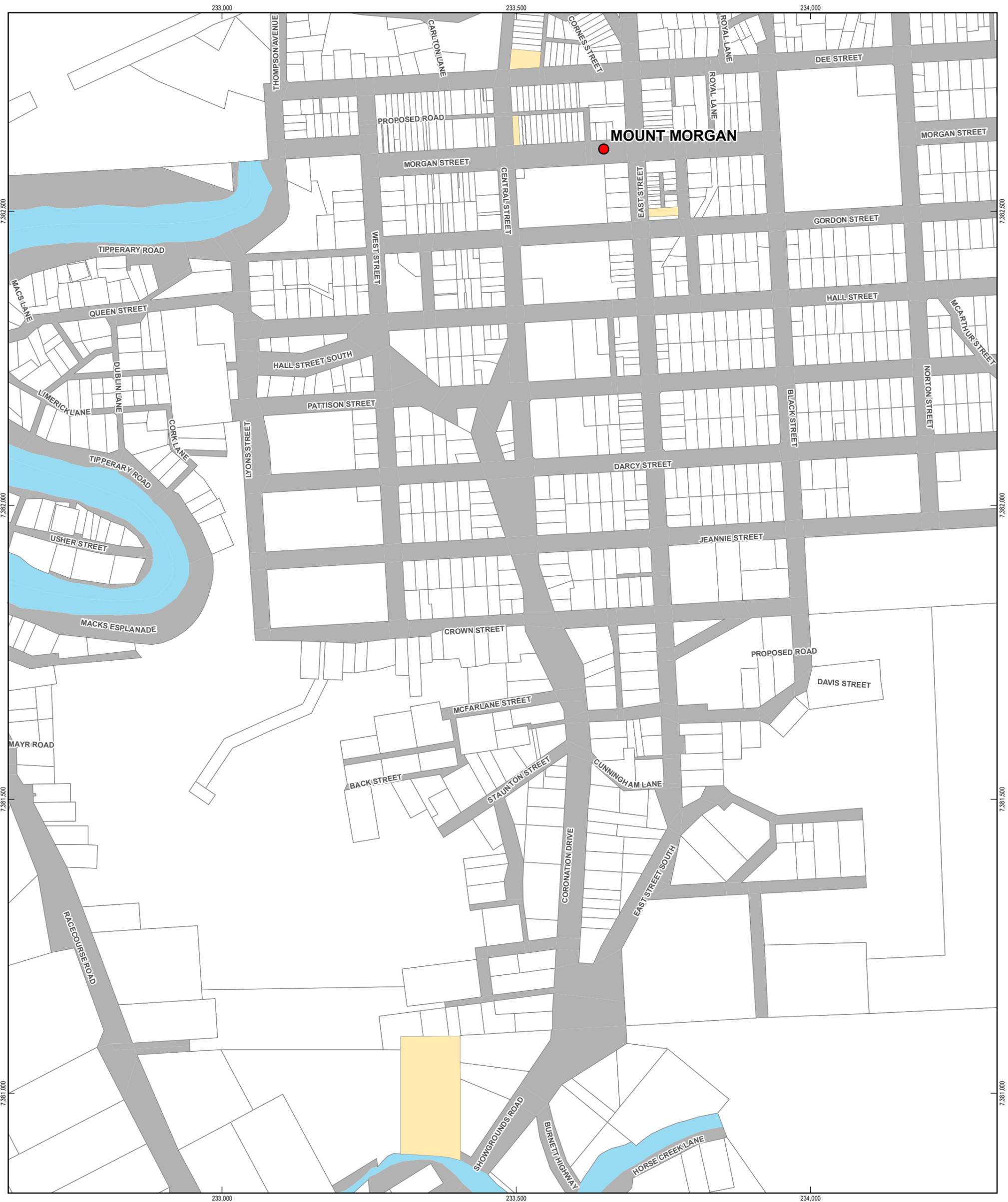
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Livingstone
Proposed Industrial Zoning Framework **Figure 4-8**

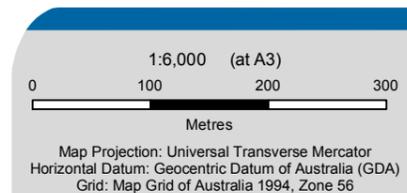


LEGEND

- Place Name
- Cadastre
- Proposed Industrial Zone
- Rail
- Road
- Township
- Waterway

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**Mount Morgan
Proposed Industrial Zoning Framework** **Figure 4-9**



Table 4-6 Proposed Industrial Zoning Framework

Industrial Area	Precinct / Sub Precinct	Existing Zone	RRC Translation	GHD Translation		Sub Area	Total Industrial Supply	Total Industrial Vacant	Total Industrial Developable
				Zone	Precinct				
Rockhampton									
Airport Special Use Area		Airport Special Use Area	Community Purposes	Community Purpose	Airport Industrial Precinct	Airport	3.0	0.0	0.0
Berserker Heights Residential Area	Thozet Road Sub Precinct	Thozet Road Sub Precinct	Low Impact Industry	Low Impact Industry		North Rockhampton Residential	10.0	3.0	0.0
Central Business District Commercial Area	Precinct 3 Mixed Use Precinct Central Business District City Frame	Denison and Kent Street Sub Precinct	Mixed Use	Principal Centre		CBD	10.0	2.0	2.0
Norbank Estate Special Use Area	Precinct 2 Industrial Norbank Estate Special Industry	Precinct 2 Industrial Norbank Estate Special Industry	High Impact Industry	High Impact Industry		North Rockhampton Residential	136.3	8.9	2.0
	Precinct 3 Industrial Norbank Estate River Related Industry	Precinct 3 Industrial Norbank Estate River Related Industry	Waterfront and Marine Industry	Low Impact Industry		North Rockhampton Residential	21.7	17.1	0.0
Musgrave Street Highway Commercial Area	No Precinct, however within the Area intent, industry is permissible where located in the area bound by Queen	Musgrave Street Highway Commercial Area	Mixed Use	Major Centre		North Rockhampton Commercial Corridor	0.0	0.0	0.0



Industrial Area	Precinct / Sub Precinct	Existing Zone	RRC Translation	GHD Translation		Sub Area	Total Industrial Supply	Total Industrial Vacant	Total Industrial Developable
				Zone	Precinct				
	Elizabeth Drive, Musgrave Street, and Bridge Street.								
Park Avenue Industrial Area	Precinct 1 Industrial Park Avenue Low Impact Industry	Precinct 1 Industrial Park Avenue Low Impact Industry	Low Impact Industry	Low Impact Industry		North Rockhampton Industrial	62.4	1.0	1.0
	Precinct 2 Industrial Park Avenue Medium Impact Industry	Precinct 2 Industrial Park Avenue Medium Impact Industry	Medium Impact Industry	Medium Impact Industry		North Rockhampton Industrial	6.6	0.0	0.0
Parkhurst Industrial Area	Precinct 1 Industrial Parkhurst Low Impact Industry	Precinct 1 Industrial Parkhurst Low Impact Industry	Low Impact Industry	Low Impact Industry		Parkhurst Kawana Industrial Corridor	334.0	163.5	101.6
	Precinct 2 Industrial Parkhurst Medium Impact Industry	Precinct 2 Industrial Parkhurst Medium Impact Industry	Medium Impact Industry	Medium Impact Industry		Parkhurst Kawana Industrial Corridor	139.3	63.5	61.4
	Precinct 3 Industrial Parkhurst High Impact Industry	Precinct 3 Industrial Parkhurst High Impact Industry	High Impact Industry	Medium Impact Industry		Parkhurst Kawana Industrial Corridor			
	Precinct 3 Industrial Parkhurst High Impact Industry	Precinct 3 Industrial Parkhurst High Impact Industry	High Impact Industry	High Impact Industry		Parkhurst Kawana Industrial Corridor	58.7	0.0	0.0



Industrial Area	Precinct / Sub Precinct	Existing Zone	RRC Translation	GHD Translation		Sub Area	Total Industrial Supply	Total Industrial Vacant	Total Industrial Developable
				Zone	Precinct				
South Rockhampton Highway Commercial Area		South Rockhampton Highway Commercial Area	Mixed Use	Mixed Use		South Rockhampton Commercial Corridor	0.0	0.0	0.0
South Rockhampton Low Impact Industrial Area	including Precinct 1 Industrial Precinct	South Rockhampton Low Impact Industrial Area	Low Impact Industry	Low Impact Industry		CBD South Rockhampton Industrial South Rockhampton Commercial Corridor	20.0	6.0	2.0
Splitlers Creek Residential	Precinct 1 Special Use Alexandra Street Mixed Use	Precinct 1 Special Use Alexandra Street Mixed Use	Mixed Use	Low Impact Industry		Parkhurst Kawana Industrial Corridor	13.0	1.0	1.0
Transport Industrial Area		Transport Industrial Area	Low Impact Industry	Medium Impact Industry		South Rockhampton Industrial	59.0	0.0	0.0
Fitzroy									
Gracemere Town Zone	Industrial	Town Industrial	Low Impact Industry	Low Impact Industry		Gracemere	32.0	4.0	4.0
Special Industrial	Marmor Works Area	Special Industrial	Extractive Industry	Extractive Industry		Fitzroy Rural	38.1	0.0	0.0
	Bajool Explosive Magazine Area	Special Industrial	Noxious and Hazardous Industry	Noxious and Hazardous Industry		Fitzroy Rural	181.5	0.0	0.0
	Bouldercombe Brickworks Area	Special Industrial	Medium Impact Industry	High Impact Industry		Fitzroy Rural	2.4	0.0	0.0
Gracemere-Stanwell Zone	Precinct A General Industry	Precinct A General Industry	Medium Impact Industry	Medium Impact Industry		Gracemere	110.0	0.0	0.0



Industrial Area	Precinct / Sub Precinct	Existing Zone	RRC Translation	GHD Translation		Sub Area	Total Industrial Supply	Total Industrial Vacant	Total Industrial Developable
				Zone	Precinct				
	Precinct B Business & Industry	Precinct B Business & Industry	Low Impact Industry	Low Impact Industry		Gracemere	76.0	51.3	45.0
	Precinct C Business & Industry	Precinct C Business & Industry	Medium Impact Industry	Medium Impact Industry		Stanwell Industrial Corridor	157.7	125.6	20.0
	Precinct D General Industry	Precinct D General Industry	High Impact Industry	High Impact Industry		Stanwell Industrial Corridor	134.0	134.0	90.0
	Precinct E Special Industry	Precinct E Special Industry	High Impact Industry	Noxious and Hazardous Industry		Stanwell Industrial Corridor	314.9	298.4	50.0
	Precinct F General Industry	Precinct F General Industry	Medium Impact Industry	High Impact Industry		Stanwell Industrial Corridor	48.0	48.0	35.0
	Precinct G General Industry	Precinct G General Industry	Medium Impact Industry	Medium Impact Industry		Stanwell Industrial Corridor	50.5	50.5	40.0
	Precinct H Special Industry	Precinct H Special Industry	High Impact Industry	High Impact Industry		Stanwell Industrial Corridor	109.0	105.7	100.0
	Precinct I Special Industry	Precinct I Special Industry	High Impact Industry	High Impact Industry		Stanwell Industrial Corridor	906	125.0	125.0
	Precinct J General Industry	Precinct J General Industry	High Impact Industry	High Impact Industry		Stanwell Industrial Corridor	227.1	197.5	174.4
	Precinct J General Industry	Precinct J General Industry	High Impact Industry	Medium Impact Industry		Stanwell Industrial Corridor	261.6	261.6	261.6
Livingstone									
Barmaryee		Light Industry	Low Impact Industry	Low Impact Industry		Livingstone Rural Balance	2.9	0.2	0.2



Industrial Area	Precinct / Sub Precinct	Existing Zone	RRC Translation	GHD Translation		Sub Area	Total Industrial Supply	Total Industrial Vacant	Total Industrial Developable
				Zone	Precinct				
		General Industry	Medium Impact Industry	Medium Impact Industry		Livingstone Rural Balance	7.1	1.8	1.8
Bondoola		General Industry	Extractive Industry	High Impact Industry		Livingstone Rural Balance	16.0	0.0	0.0
Emu Park		Light Industry	Low Impact Industry	Low Impact Industry		Livingstone Rural Balance	5.0	2.0	0.0
Marlborough		Light Industry	Low Impact Industry	Low Impact Industry		Livingstone Rural Balance	5.0	0.0	0.0
Nerimbera		General Industry	Medium Impact Industry	High Impact Industry		Livingstone Rural Balance	24.0	0.0	0.0
Yaamba		Light Industry	Low Impact Industry	Low Impact Industry		Livingstone Rural Balance	1.0	1.0	1.0
Yeppoon		Light Industry	Low Impact Industry	Low Impact Industry		Yeppoon and Surrounds	18.0	4.0	3.0
Mount Morgan									
Existing industrial uses		Business Zone	District Centre	Township		Mount Morgan Township	2.3	0.0	0.0



4.7 Industrial Land Supply per Sub Area and Industry Zone

Based on the above industrial land audit, the industrial land supply for each sub area and each industry category zone for the Rockhampton Region was able to be calculated. The following **Table 4-7** provides a summary per planning area, the complete table has been provided in **Appendix D**.

Table 4-7 Industrial Land Supply per Planning Area and Industry Zone (ha)

Sub Area	Industrial Land Supply	Vacant Land	Developable Land*
Rockhampton			
Low Impact Industry	474	194	108
Medium Impact Industry	205	64	61
High Impact Industry	195	9	2
Noxious & Hazardous Industry	0	0	0
<i>Total</i>	<i>873</i>	<i>266</i>	<i>171</i>
Fitzroy			
Low Impact Industry	108	55	49
Medium Impact Industry	581	438	322
High Impact Industry	1464	610	524
Noxious & Hazardous Industry	496	298	50
<i>Total</i>	<i>2649</i>	<i>1401</i>	<i>945</i>
Livingstone			
Low Impact Industry	32	7	4
Medium Impact Industry	7	2	2
High Impact Industry	40	0	0
Noxious & Hazardous Industry	0	0	0
<i>Total</i>	<i>80</i>	<i>8</i>	<i>6</i>
Mount Morgan			
Low Impact Industry	2	0	0
Medium Impact Industry	0	0	0
High Impact Industry	0	0	0
Noxious & Hazardous Industry	0	0	0



Sub Area	Industrial Land Supply	Vacant Land	Developable Land*
<i>Total</i>	2	0	0
Rockhampton Region			
Low Impact Industry	616	256	161
Medium Impact Industry	793	504	385
High Impact Industry	1699	619	526
Noxious & Hazardous Industry	496	298	50
<i>Total</i>	3604	1675	1122

Note 1: Developable Land figures do not account for existing limitations on the availability of land due to Native Title and tenure, infrastructure and access provision

Note 2: Industrial Land Supply for Fitzroy does not include Strategic Port Land (5ha)



5. Industrial Needs Assessment

5.1 Supply-Demand Balance

Need for industrial land is determined after a consideration of the remaining supply of industrial land in the context of projected demand. A negative supply demand balance indicates a projected shortage of industrial land within a planning area or sub area.

At a Regional scale, this analysis will indicate whether there is sufficient industrial zoned land to accommodate the projected demand. However, when disaggregated by sub area and / or industry zone, the supply demand balance analysis will also identify whether there is industrial land shortages projected in particular localities and / or for particular industrial zones.

This is apparent for the Rockhampton Region, as the analysis indicates there is an over supply of industrial zoned land across the Region to 2031, however when disaggregated by sub area and industry zone, there are shortages anticipated in the projection period for particular sub areas within Rockhampton, Livingstone and Fitzroy.

In terms of the industrial land use strategy, it will be important to consider these projected shortages in the context of the respective planning area and the Rockhampton Region. For example, from a distribution perspective these shortages may be accommodated within nearby or adjacent sub areas, or from an industry type perspective, due to emerging land use conflicts with sensitive uses, higher impact uses should be encouraged to relocate to other more suitable sub areas.

5.1.1 Supply Demand Balance per Sub Area

The following **Table 5-1** summarises the supply demand balance for the Rockhampton Region and its component planning areas. Refer to **Appendix E** for the supply demand balance per sub area and industry zone.

The supply demand balance for the Rockhampton Region suggests there is ample zoned industrial land within each of the planning areas until 2031. However, when this result is disaggregated by sub area, it is noted that the following sub areas are anticipated to face industrial land shortages within the projection period:

- ▶ Rockhampton:
 - Airport (industrial land shortage by 2016);
 - North Rockhampton Commercial Corridor (industrial land shortage by 2011);
 - North Rockhampton Industrial (industrial land shortage by 2016);
 - South Rockhampton Industrial (industrial land shortage by 2011);
 - South Rockhampton Balance (industrial land shortage by 2016);
 - South Rockhampton Commercial Corridor (industrial land shortage by 2016);
 - South Rockhampton Residential (industrial land shortage by 2016);
- ▶ Fitzroy:

- Fitzroy Rural (industrial land shortage by 2011);
- ▶ Livingstone:
 - Kinka Beach and Surrounds (industrial land shortage by 2016);
 - The Caves/Rockyview (industrial land shortage by 2021);
 - Livingstone Rural balance (industrial land shortage by 2016); and
 - Yeppoon and Surrounds (industrial land shortage by 2016).

Table 5-1 Supply Demand Balance per Planning Area (ha)

Planning Area	2011	2016	2021	2026	2031
Supply					
Rockhampton	171	171	171	171	171
Fitzroy	945	945	945	945	945
Livingstone	6	6	6	6	6
Mount Morgan	0	0	0	0	0
Rockhampton Region	1122	1122	1122	1122	1122
Demand					
Rockhampton	11	38	51	65	81
Fitzroy	2	8	23	40	61
Livingstone	3	11	20	29	38
Mount Morgan	0	0	1	1	1
Rockhampton Region	15	57	94	135	180
Supply Demand Balance					
Rockhampton	161	134	120	106	91
Fitzroy	943	937	922	905	885
Livingstone	3	-5	-14	-23	-32
Mount Morgan	0	0	-1	-1	-1
Rockhampton Region	1107	1065	1028	987	942

5.1.2 Supply Demand Balance per Industry Zone

The following **Table 5-2** to **Table 5-5** summarise the supply demand balance per industry zone for each planning area in the Rockhampton Region. Refer to **Appendix E** for the supply demand balance per sub area and industry zone.

While there is ample zoned industrial land within each of the planning areas until 2031, the supply demand balance per industry zone suggests there is a mismatch between



the industry zone supplied and the industry zone demanded within the projection period. This is demonstrated by the following planning areas which are anticipated to face shortages in particular industry zones within the projection period:

- ▶ Rockhampton:
 - High Impact Industry (industrial land shortage by 2016);
 - Noxious and Hazardous Industry (industrial land shortage by 2011);
- ▶ Livingstone:
 - Low Impact Industry (industrial land shortage by 2016);
 - Medium Impact Industry (industrial land shortage by 2021);
 - High Impact Industry (industrial land shortage by 2011);
 - Noxious and Hazardous Industry (industrial land shortage by 2016); and
- ▶ Mount Morgan:
 - Low Impact Industry (industrial land shortage by 2021).

Table 5-2 Rockhampton Supply Demand Balance per Industry Zone (ha)

Zone	2011	2016	2021	2026	2031
Supply					
Low Impact Industry	108	108	108	108	108
Medium Impact Industry	61	61	61	61	61
High Impact Industry	2	2	2	2	2
Noxious and Hazardous Industry	0	0	0	0	0
Rockhampton	171	171	171	171	171
Demand					
Low Impact Industry	4	12	14	16	18
Medium Impact Industry	5	16	23	31	39
High Impact Industry	1	4	6	8	11
Noxious and Hazardous Industry	2	6	8	10	13
Rockhampton	11	38	51	65	81
Supply Demand Balance					
Low Impact Industry	104	96	94	92	90
Medium Impact Industry	57	45	38	31	23
High Impact Industry	1	-2	-4	-6	-9
Noxious and Hazardous Industry	-2	-6	-8	-10	-13



Zone	2011	2016	2021	2026	2031
Rockhampton	161	134	120	106	91

Table 5-3 Fitzroy Supply Demand Balance per Industry Zone (ha)

Zone	2011	2016	2021	2026	2031
Supply					
Low Impact Industry	49	49	49	49	49
Medium Impact Industry	322	322	322	322	322
High Impact Industry	524	524	524	524	524
Noxious and Hazardous Industry	50	50	50	50	50
Fitzroy	945	945	945	945	945
Demand					
Low Impact Industry	1	2	7	12	17
Medium Impact Industry	1	4	9	16	23
High Impact Industry	0	1	3	5	8
Noxious and Hazardous Industry	0	2	5	8	13
Fitzroy	2	8	23	40	61
Supply Demand Balance					
Low Impact Industry	49	47	42	37	32
Medium Impact Industry	321	318	313	306	299
High Impact Industry	524	524	522	519	517
Noxious and Hazardous Industry	50	48	45	42	38
Fitzroy	943	937	922	905	885

Table 5-4 Livingstone Supply Demand Balance per Industry Zone (ha)

Zone	2011	2016	2021	2026	2031
Supply					
Low Impact Industry	4	4	4	4	4
Medium Impact Industry	2	2	2	2	2



Zone	2011	2016	2021	2026	2031
High Impact Industry	0	0	0	0	0
Noxious and Hazardous Industry	0	0	0	0	0
Livingstone	6	6	6	6	6
Demand					
Low Impact Industry	1	5	10	15	21
Medium Impact Industry	1	2	3	5	6
High Impact Industry	1	2	3	4	5
Noxious and Hazardous Industry	1	2	3	5	6
Livingstone	3	11	20	29	38
Supply Demand Balance					
Low Impact Industry	3	-1	-6	-11	-17
Medium Impact Industry	1	0	-2	-3	-4
High Impact Industry	-1	-2	-3	-4	-5
Noxious and Hazardous Industry	-1	-2	-3	-5	-6
Livingstone	3	-5	-14	-23	-32

Table 5-5 Mount Morgan Supply Demand Balance per Industry Zone (ha)

Zone	2011	2016	2021	2026	2031
Supply					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious and Hazardous Industry	0	0	0	0	0
Mount Morgan	0	0	0	0	0
Demand					
Low Impact Industry	0	0	0	0	1
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious and Hazardous Industry	0	0	0	0	0

Zone	2011	2016	2021	2026	2031
Mount Morgan	0	0	1	1	1
Supply Demand Balance					
Low Impact Industry	0	0	0	0	-1
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious and Hazardous Industry	0	0	0	0	0
Mount Morgan	0	0	-1	-1	-1

5.2 Need for Additional Zoned Industrial Land

As indicated by the supply demand balance analysis above, while there is an overall ample supply of industrial land across the Region, the distribution and suitability of this land does not necessarily match the requirements of the industry sectors. For example, there is ample land for large footprint “regional” or population generating industries in the Gracemere-Stanwell Industrial Precinct (Stanwell Industrial Corridor Sub Area), however a shortage of land for light and service industry (or population serving industrial activities) is anticipated in the northern and southern centres of Rockhampton and in the coastal settlements of Yeppoon and Kinka Beach. Even where there would appear to be an adequate supply of land, there are cases where environmental and other legislative or policy constraints limit the ability to bring such areas on to the market.

The following sub-sections provide recommendations regarding how the projected supply shortages could be met in each planning area after consideration of both quantitative and qualitative issues.

5.2.1 Rockhampton City Planning Area

The supply demand balance has highlighted the quantitative need for additional zoned industrial land within the following sub areas of the Rockhampton City Planning Area by 2031:

- ▶ Airport – additional 1 ha by 2031;
- ▶ North Rockhampton Commercial Corridor – additional 2 ha by 2031;
- ▶ North Rockhampton Industrial – additional 4 ha by 2031;
- ▶ South Rockhampton Industrial – additional 10 ha by 2031;
- ▶ South Rockhampton Balance – additional 1 ha by 2031;
- ▶ South Rockhampton Commercial Corridor – additional 2 ha by 2031; and
- ▶ South Rockhampton Residential – additional 1 ha by 2031.



For these sub areas, the majority of the shortage is for low impact and medium impact industrial land. With resolution of current constraining factors (infrastructure provision, tenure and Native Title and appropriate subdivision), there is sufficient supply of low impact (90 ha) and medium impact (35 ha) industrial land in the Parkhurst Kawana Industrial Corridor, which could accommodate the projected shortages of these sub areas. In particular to South Rockhampton, the CBD can also provide 2 ha of low impact industrial land. It is important to note, that there is also approximately 23 ha of 'constrained' industrial land across the respective sub areas, which if the resolved, could be developed and therefore accommodate some of this demand.

Along with a demand for low and medium impact industrial land, there is also a shortage anticipated for high impact (11 ha) and noxious and hazardous (13 ha) industrial land, in particular in the Parkhurst Kawana Industrial Corridor. This is likely to come about due to emerging land use conflicts, such as residential encroachment, deeming the existing industrial land unsuitable for the higher impact activities. As a result, it is proposed that these types of industries should be encouraged to locate in the Gracemere-Stanwell Industrial Precinct, where there is ample land allocated in these zones.

5.2.2 Fitzroy Planning Area

The Fitzroy Planning Area has an excess of approximately 885 ha of industrial land, in particular of medium impact (299 ha) and high impact (517 ha) industrial zoned land. The physical attributes of the Gracemere-Stanwell Industrial Precinct including lot size and configuration, relatively flat terrain, close proximity to the Capricorn Highway and rail line and adequate separation between sensitive uses, deems this land suitable for higher impact industrial uses and should therefore be promoted as the location for such activities. As a result, it is considered that the Gracemere-Stanwell Industrial Precinct has sufficient and suitable land (with the resolution of servicing and access issues) to supply the estimated demand for both Fitzroy Planning Area and the overspill from Rockhampton City Planning Area.

Despite this over supply, the Fitzroy Rural sub area is anticipated to experience a shortage of 3 ha by 2031, predominantly for low and medium impact industries. With the existing supply of low and medium impact industrial land in Precincts B and C, it is expected that this shortage will be accommodated. To ensure this occurs however, the provision of reticulated services to precincts west of Precinct B will need to be provided.

5.2.3 Livingstone Planning Area

Within the Livingstone Planning Area there is a need for additional zoned industrial land within the following sub areas by 2031:

- ▶ Kinka Beach and Surrounds – additional 2 ha by 2031;
- ▶ The Caves/Rockyview – additional 1 ha by 2031;
- ▶ Livingstone Rural Balance – additional 12 ha by 2031; and

- ▶ Yeppoon and Surrounds – additional 18 ha by 2031.

To yield this supply, it is generally recommended that double the required land would need to be identified. As a result, 64 hectares of raw land needs to be identified in Livingstone Planning Area.

Due to recent approvals, there is additional industrial land located within the Livingstone Rural Balance sub area, in particular on the periphery of the Yeppoon and Surrounds sub area. Taking into account this 'new' industrial land, there are approximately 57 ha of additional industrial land located at Barmaryee, Hidden Valley, Bondoola and Emu Park that can assist in accommodating the projected shortages. It is important to note however, that land supply in these 'new' industrial areas are the raw land values, so the supply of industrial land supply may reduce once the land is subdivided. The Yaamba township also offers 1 ha of industrial zoned land which could supply the nearby The Caves/Rockyview sub area.

In respect to the supply demand balance analysis for the industrial zones, the majority of the anticipated demand is for low impact industry (additional 17 ha by 2031). Therefore new industrial land needs to be close to the population it is servicing, services and transportation networks and relatively unconstrained.

5.2.4 Mount Morgan Planning Area

The Mount Morgan Township sub area will require an additional 1 ha of land identified, which is suitable for medium impact industrial uses. It is proposed that this land could be provided through infill or brownfield development within the township.

5.2.5 Intermodal Transport Precinct

RRC and members of the local community have identified the need for an intermodal transport hub for freight within the Rockhampton Region, combining air, road and rail transport facilities with warehousing and storage. This is recognition of:

- ▶ Rockhampton being centrally located between Brisbane, Townsville and Longreach;
- ▶ The need to service potential military uses and / or freight, minerals distribution (including bauxite from north of Rockhampton) and agricultural produce distribution (including beef and horticultural products);
- ▶ The need to remove rail freight trains out of the Rockhampton CBD due to potential blocking of bridge crossings of the Fitzroy River preventing access from North Rockhampton to South Rockhampton;
- ▶ Limitations on hauling dangerous goods on the existing road network; and
- ▶ The establishment of an intermodal transport hub providing an opportunity to overcome current transport issues and create a new freight logistics industry to support and diversify the local transport industry.



A committee comprising members of both the public and private sector, namely the Central Queensland Intermodal Logistics Hub, has been investigating potential locations for this hub and have suggested the following locations:

- ▶ Parkhurst Industrial Area, on QR owned land in the north of the Area;
- ▶ Gracemere-Stanwell Industrial Precinct, near Kabra;
- ▶ West of Rockhampton Airport, south of Yeppoon Creek; and
- ▶ Further south along Bruce highway, in the Port Curtis Rural Area.

The types of industrial activities that would be located in such an area would require the following attributes:

- ▶ large land parcels (>5000m²);
- ▶ relatively flat and unconstrained land, in particular unaffected by flooding;
- ▶ access to major transport corridors and facilities including the future bypass road option (either east or west) and Rockhampton Airport; and
- ▶ preferably south of Rockhampton to limit vehicle movements through town residential areas and the CBD.

As a result, the pending infrastructure projects including the overpass of the Capricorn Highway at Kabra and the proposed bypass road and rail options for crossing of the flood plain will have a significant bearing on the most suitable location for the intermodal precinct. While the western bypass road option would provide some flood mitigation and opportunity for rail in the same corridor benefiting the Kabra and Airport sites, the eastern bypass road option would likely to be more affordable and would benefit the transport of cattle from the Gracemere Saleyards to the meatworks at Lakes Creek and Nerimbera.

Analysis was undertaken by Economic Associates to determine the estimated demand for a transport hub in the Rockhampton Region (refer to **Appendix B**). This analysis highlights that the sub areas within the Rockhampton Region with the highest demand for transport, logistics & related sectors are:

- ▶ Parkhurst-Kawana Industrial Corridor Sub Area (32.0 hectares by 2031); and
- ▶ Stanwell Industrial Corridor Sub Area (30.0 hectares by 2031).

Both sub areas are projected to have a similar level of land demand by 2031, suggesting that either represent ideal candidates for an intermodal facility within the Rockhampton Region.

The Parkhurst-Kawana Industrial Corridor Sub Area is located to the north of Rockhampton CBD. However, it is anticipated that a significant amount of freight to an intermodal facility within Rockhampton would originate from the southern and central Bowen Basin, which are accessed via the Capricorn Highway, located south west of Rockhampton City. If an intermodal facility was to be located within the northern half of Rockhampton, oversize loads would have to pass through Rockhampton CBD, which is not considered an optimal outcome.

The Stanwell Industrial Corridor Sub Area, on the other hand, is located to the south of Rockhampton CBD and as such, does not face this same constraint. While the Gracemere-Stanwell Industrial Precinct has faced access issues given the need to cross the Central Railway, a major coal haulage route, via at-grade crossings, the State Government has recently committed \$10 million to the construction of a railway overpass to the Stanwell Industrial Corridor.

5.3 Sequencing of Industrial Land

In terms of sequencing of industrial land across the Rockhampton Region, the most important factors to consider include:

- ▶ the projected demand for industrial land, where this demand is expected and the timing of this demand;
- ▶ the existing and proposed infrastructure network and timing of proposed infrastructure upgrades; and
- ▶ the existing and likely future distribution of centres and growth areas.

As there is uncertainty surrounding the provision of proposed infrastructure upgrades, the following will provide comment on what areas will require this infrastructure to be in place, in order to provide serviced land to meet the estimated demand.

5.3.1 Rockhampton Region

As discussed previously, by 2031 there is an estimated demand for 180 hectares of industrial land, of which is expected to be experienced in the following key sub areas:

- ▶ Rockhampton:
 - Parkhurst Kawana Industrial Area 58 ha;
 - South Rockhampton Industrial 10 ha; and
 - North Rockhampton Industrial 4 ha;
- ▶ Fitzroy:
 - Stanwell Industrial Corridor (Precincts C-J) 54 ha;
- ▶ Livingstone:
 - Yeppoon and Surrounds 21 ha; and
 - Livingstone Rural Balance 15 ha.

In terms of sequencing, 97 ha or 53.9% of this demand, is expected by 2021. In particular, this is emphasised in the Rockhampton City Planning Area, where a total of 81 ha is expected by 2031, 38 ha (46.9%) of this total demand is required by 2016 and 51 ha (63%) is required by 2021. Therefore, in order to accommodate this demand, industrial land needs to be available for development in these sub areas, or in sub areas which can service these sub areas, in the short term (5 – 10 years).

This projected demand aligns with the existing centres and identified growth areas within Rockhampton City and Livingstone Planning Areas.

5.3.2 Rockhampton City

As proposed above, Parkhurst Kawana Industrial Corridor has sufficient supply of industrial zoned land including 103 ha of low impact industry and 61 ha of medium impact industry to accommodate the projected demand for Rockhampton City Planning Area. As identified through the course of this study however, the remaining supply in Parkhurst requires infrastructure issues, tenure and inappropriate lot sizes (currently too large for low and medium impact industrial uses) to be addressed. As there are approximately 25 ha of land within the Parkhurst Kawana Industrial Corridor and 2 ha within the CBD which are considered available immediately, the following land will need to be prepared by the following timeframes:

- ▶ 0 ha by 2011;
- ▶ 7 ha by 2016;
- ▶ 22 ha by 2021;
- ▶ 33 ha by 2026; and
- ▶ 48 ha by 2031.

As identified previously, due to the availability of unsuitable land in Rockhampton City, industrial land demanded for high impact industry (11 ha) and noxious and hazardous industry (13 ha) is to be accommodated in the Gracemere-Stanwell Industrial Precinct.

5.3.3 Fitzroy

Fitzroy Planning Area provides sufficient zoned industrial land to meet the anticipated demand to 2031 for both Fitzroy and the overspill from Rockhampton City, however only land in Precinct B is currently provided with reticulated services. As there are currently 45 ha of developable land in Precinct B, there is considered to be sufficient available land to meet the anticipated demand for 17 ha of low impact industry land to 2031.

A further 23 ha of medium impact industry land, 19 ha of high impact industry (including 11 ha estimated for Rockhampton City) and 26 ha of noxious and hazardous industry (including 13 ha estimated for Rockhampton City) land is required by 2021. As a result, the following land will need to be prepared by the following timeframes:

- ▶ 4 ha by 2011;
- ▶ 15 ha by 2016;
- ▶ 30 ha by 2021;
- ▶ 47 ha by 2026; and
- ▶ 67 ha by 2031.

As Precincts C (medium impact), D (high impact), J (medium and high impact) and E (noxious and hazardous) have been allocated for such industrial uses, it is recommended that these Precincts be prepared first.

5.3.4 Livingstone

Industrial land shortages in Livingstone will need to be accommodated within the Livingstone Rural Balance sub area on the periphery of the Yeppoon and Emu Park localities. Currently there are 2 ha (1.8 ha low impact industry, 0.2 ha medium impact industry land) of developable and serviced industrial land within these localities. As a result, the following land will need to be prepared by the following timeframes:

- ▶ 1 ha by 2011;
- ▶ 11 ha by 2016;
- ▶ 20 ha by 2021;
- ▶ 29 ha by 2026; and
- ▶ 38 ha by 2031.

As a majority of the demand is expected to occur in the Yeppoon and Surrounds sub area, it is recommended that the Hidden Valley, Pineapple Patch and Manns Roads developments be the focus of the immediate supply.

5.4 Implications for Industrial Land Strategy

The industrial needs assessment has identified the following supply issues, which will require consideration in the industrial land strategy:

- ▶ Rockhampton City Planning Area
 - A shortage of low impact (3 ha) and medium impact (11 ha) industrial land has been identified in the central sub areas of Rockhampton. With resolution of current constraining factors, the Parkhurst Kawana Industrial Corridor Sub Area offers sufficient supply of low impact (90 ha) and medium impact (35 ha) industrial land to accommodate the projected shortages of these sub areas. In particular to South Rockhampton, the CBD can also provide 2 ha of low impact industrial land.
 - To accommodate the anticipated demand for low and medium impact industries the following land will need to be prepared by the following timeframes 0 ha by 2011; 7 ha by 2016; 22 ha by 2021; 33 ha by 2026; and 48 ha by 2031.
 - A shortage of high impact (11 ha) and noxious and hazardous (13 ha) industrial land, in particular in the Parkhurst Kawana Industrial Corridor is anticipated. Due to the unsuitability of industrial land in Rockhampton City for such activities, it is proposed that these types of industries should be encouraged to locate in the Gracemere-Stanwell Industrial Precinct, where there is ample land allocated in these zones.
- ▶ Fitzroy Planning Area
 - The Fitzroy Planning Area has an excess of approximately 885 ha of industrial land, in particular of medium impact (299 ha) and high impact (517 ha) industrial zoned land. With the resolution of servicing and access issues, the Gracemere-Stanwell Industrial Precinct can supply the estimated demand for



both Fitzroy Planning Area and the overspill from Rockhampton City Planning Area.

- Despite this over supply, the Fitzroy Rural Sub Area is anticipated to experience a shortage of 3 ha by 2031, predominantly for low and medium impact industries. With the existing supply of low and medium impact industrial land in Precincts B and C of the Gracemere-Stanwell Industrial Precinct, it is expected that this shortage will be accommodated.
- To accommodate the anticipated demand for low, medium, high impact and noxious and hazardous industries the following land will need to be prepared by the following timeframes - 4 ha by 2011; 15 ha by 2016; 30 ha by 2021; 47 ha by 2026; and 67 ha by 2031. As Precincts C (medium impact), D (high impact), J (medium and high impact) and E (noxious and hazardous) have been allocated for such industrial uses, it is recommended that these Precincts be prepared first.
- ▶ **Livingstone Planning Area**
 - There is a need for 32 ha of additional zoned industrial land within the Livingstone Planning Area by 2031. To yield this supply, double the required land (64 ha) needs to be identified. As the majority of the anticipated demand is for low impact industry (additional 17 ha by 2031), it is proposed that this land be identified in proximity to the localities of Yeppoon and Emu Park.
 - There is additional industrial land located within the Livingstone Rural Balance sub area, in particular on the periphery of the Yeppoon and Surrounds sub area. Taking into account this 'new' industrial land, there are approximately 57 ha of additional industrial land located at Barmaryee (Pineapple Patch), Hidden Valley and Emu Park (Manns Road) that can assist in accommodating the projected shortages. It is important to note however, that land supply in these 'new' industrial areas are the raw land values, so the supply of industrial land supply may reduce once the land is subdivided.
 - To accommodate the anticipated demand for low impact industries the following land will need to be prepared by the following timeframes - 1 ha by 2011; 11 ha by 2016; 20 ha by 2021; 29 ha by 2026; and 38 ha by 2031.
- ▶ **Mount Morgan**
 - The Mount Morgan Township sub area will require 1 ha of additional industrial land identified, which is suitable for medium impact industrial uses. It is proposed that this land could be provided through infill or brownfield development within the township.
- ▶ **Intermodal Transport Precinct**
 - Suggested locations for the transport hub include Parkhurst Industrial Area, Gracemere-Stanwell Industrial Precinct (near Kabra), Rockhampton Airport and Port Curtis Rural Area.
 - Analysis undertaken by Economic Associates highlights that the sub areas within the Rockhampton Region with the highest demand for transport, logistics & related sectors are Parkhurst-Kawana Industrial Corridor Sub Area (32.0



hectares by 2031) and Stanwell Industrial Corridor Sub Area (30.0 hectares by 2031).

5.4.1 Industrial Land Location Criteria

The suitability of land for industrial use depends to a large extent on the nature and scale of industrial use proposed. While some generic criteria can be readily identified that would be applicable to all industrial uses, some industrial uses have specific site or locational requirements. As a result, the following criteria (refer to **Table 5-6**) was developed for assessing the suitability of industrial land for each of the industry zones. For each industry zone, an assessment of whether the particular criteria would be considered as a high, moderate or low priority has been indicated.

The industrial land location criteria has been applied to vacant industrial land supply, potential industrial expansion areas and new industrial areas to determine their suitability for particular industry zones. This allocation of industrial zones, will aim to reinforce the role and hierarchy of industrial areas across the Region.

Table 5-6 Industrial Land Location Criteria

Criteria	Low Impact Industry	Medium Impact Industry	High Impact Industry	Noxious and Hazardous Industry
Physical Requirements				
Minimum Parcel Size	1000 m ²	5000 m ²	1 ha	2 ha
Consideration of Adjacent / Sensitive Uses	L	M	H	H
Topographic Constraints	L	M	H	H
Geological Conditions	L	L	M	H
Hydrology, Flooding and Drainage	H	H	M	M
Consideration of Air Shed Capacity and Impact on Air Quality	L	L	M	H
Consideration of environmental constraints including flora and fauna, GQAL and buffer requirements to sensitive uses	L	M	H	H
Infrastructure Requirements				
Proximity to national highway	L	L	H	H
Proximity to major access road	M	M	H	H



Criteria	Low Impact Industry	Medium Impact Industry	High Impact Industry	Noxious and Hazardous Industry
Proximity or adjacency to railway	L	M	H if involving large volume transfer of material or products	H if involving large volume transfer of material or products
Proximity to reticulated services (water, sewer)	H	H	M	L
Proximity to energy (gas, oil, power)	L	L	M	H
Commercial Considerations				
Existing Industrial Land Use and Potential for Synergies / Industrial Clustering	H	H	M	L
Proximity to towns or larger centres and therefore accessibility to the market, potential labour force, emergency services and essential services	H	M	L	L

5.5 Potential Expansion Areas or New Industrial Areas

To accommodate the projected shortages of industrial land identified for the Rockhampton Region in the industrial needs assessment, potential areas for industrial expansion and/or new industrial areas have been proposed. In addition, in order to capture those industrial activities occurring outside of existing industrial zoned land, for example Hastings Deering in Port Curtis, rural servicing industries in Gracemere-Stanwell Industrial Precinct and extractive industries throughout the Region, these areas have also been identified as potential expansion and/or new industrial areas. The recognition of these areas as industrial land is necessary in order to regulate these uses appropriately and to be able to project them from incompatible uses. These potential expansion/new industrial areas are in addition to the vacant industrial land supply in the Rockhampton Region.

5.5.1 Rockhampton City

The estimated shortages identified for low and medium impact industry in the central Sub Areas are proposed to be accommodated in the Parkhurst Industrial Area. In addition, the anticipated demand for high impact and noxious and hazardous industries in Rockhampton City are proposed to be accommodated in the Gracemere-Stanwell Industrial Precinct.

There is however significant industrial uses occurring outside of existing zoned industrial land, which are proposed as expansion and / or new industrial land:



- ▶ Hastings Deering located at Port Curtis;
- ▶ Existing warehousing and storage and transport related uses located in Depot Hill Special Use Area and Depot Hill Residential Area as these are seen as an expansion of the Transport Industrial Area; and
- ▶ Peak Hill Quarry is proposed to be identified as Extractive Industry.

An additional 3.6 ha of remnant housing and commercial operations along Canoona Road in the Airport Sub Area and adjacent to existing industrial uses is also proposed to be zoned as an industrial precinct of the Airport, to facilitate the transition of these houses and commercial operations to industrial uses.

5.5.2 Fitzroy

The Fitzroy Planning Area has an oversupply of industrial zoned land and with the resolution of servicing and access issues, the Gracemere-Stanwell Industrial Precinct can supply the estimated demand for both Fitzroy Planning Area and the overspill from Rockhampton City Planning Area. The following areas however are proposed as expansion / new industrial areas to capture all industrial activity in the Planning Area:

- ▶ Due to the prevalence of rural servicing industries located between Precincts B and C, it is proposed that this land be zoned as low impact industry.
- ▶ The Fitzroy Planning Area also comprises significant extractive industries located at Pink Lily Sands, Stanwell and Marmor. It is proposed that these industries be included in the Extractive Industry Zone.
- ▶ It is also proposed that approximately 184 ha of industrial investigation land be zoned adjacent to the existing Bajool Explosive Magazine Area. This will provide opportunity for industrial uses which have a synergy with the existing use, but will also act as a buffer protecting the Bajool Explosive Magazine Area from incompatible uses.

5.5.3 Livingstone

As identified in the industrial needs assessment, approximately 64 hectares of raw land needs to be identified to accommodate the anticipated shortfall of 32 hectares to 2031. Further, as the majority of the anticipated demand is for low impact industry, it is suggested that additional industrial land provision is investigated around the localities of Yeppoon and Emu Park. As a result, the following potential expansion / new industrial areas have been identified:

- ▶ An additional 1.2 ha of remnant housing located adjacent to industrial uses along Tanby Road, Yeppoon should be zoned as industrial to facilitate the transition of these houses to industrial uses.
- ▶ Approximately 3.2 ha of land at Hidden Valley, located across the Scenic Highway from existing industrial land of Jabiru Drive, Barmaryee. This land has been approved for medium impact industrial development and is currently available to the market.



- ▶ A large area of land of approximately 32 ha to the south of Hidden Valley referred to as the Pineapple Patch has also been approved for medium impact industrial development, however preparation works have not commenced. The Pineapple Patch development is proposed to comprise low impact industry (12 hectares), medium impact industry (18 hectares) and a multi-modal transport facility (1.5 hectares)
- ▶ Another opportunity for further industrial land also exists on Manns Road, Emu Park. This site comprises 22 ha of land and has been subject to development approvals for an industrial subdivision. As this site is sensitive to scenic amenity issues of the gazetted Capricorn Coast (under Iconic Places Legislation) further investigation of its suitability is required.
- ▶ It is also proposed that 32.2 ha land adjacent to the existing industrial land at Bondoola, which comprises a sawmill, be zoned as industrial investigation for the purposes of accommodating higher impact activities. This site is well hidden from the highway and comprises large land parcels, relatively flat land and close proximity to major transport corridors.
- ▶ Extractive industries located at Nerimbera and QMAG Magnesite Mine near Kunwarara are proposed to be included in the Extractive Industry zone.

5.5.4 Mount Morgan

The Mount Morgan Township sub area will require 1 ha of additional industrial land identified, which is suitable for medium impact industrial uses. It is proposed that this land could be provided through infill or brownfield development within the township.

5.5.5 Summary of Recommendations

The following **Table 5-7** summarises the above recommendations for potential areas for industrial expansion and/or new industrial areas. **Figure 4-6 - Figure 4-9** also show the proposed areas.



Table 5-7 Proposed Expansion and New Industrial Areas

Industrial Area	Precinct / Sub Precinct	Existing Zone	RRC Translation	GHD Translation		Sub Area	Total Industrial Supply	Total Industrial Vacant	Total Industrial Developable
				Zone	Precinct				
Rockhampton									
Airport Special Use Area		Airport Special Use Area	Community Purposes	Community Purpose	Airport Industrial Precinct	Airport	6.6	2.5	0.0
Depot Hill Special Use Area		Depot Hill Special Use Area	Limited Development	Medium Impact Industry		South Rockhampton Industrial	7.4	0.0	0.0
Depot Hill Residential Area	Precinct 1 Residential Pecinct Eastern Depot Hill	Precinct 1 Residential Pecinct Eastern Depot Hill	Limited Development	Medium Impact Industry		South Rockhampton Industrial	0.8	0.0	0.0
	Precinct 2 Residential Pecinct Western Depot Hill	Precinct 2 Residential Pecinct Western Depot Hill	Limited Development	Medium Impact Industry		South Rockhampton Industrial	13.4	0.0	0.0
Port Curtis Rural Area		Port Curtis Rural Area	Limited Development	Medium Impact Industry		South Rockhampton Balance	20.3	0.0	0.0
Peak Hill Quarry (Yeppoon Road, Rockhampton)		Yeppoon Road Corridor Environmental Protection Area	Environmental Conservation and Management	Extractive Industry		North Rockhampton Balance	66.8	0.0	0.0
Fitzroy									
Special Industrial	Bajool Explosive Magazine Area	Special Industrial	Noxious and Hazardous Industry	Industry Investigation		Fitzroy Rural	183.7	183.7	183.7
Gracemere-Stanwell Zone	Precinct K Rural/Village Balance (between B & C)	Precinct K Rural/Village Balance	Limited Development	Low Impact Industry		Stanwell Industrial Corridor	70.0	45.0	45.0



Industrial Area	Precinct / Sub Precinct	Existing Zone	RRC Translation	GHD Translation		Sub Area	Total Industrial Supply	Total Industrial Vacant	Total Industrial Developable
				Zone	Precinct				
Pink Lily Sands (Pink Lily Road, Pink Lily)				Extractive Industry		Fitzroy Rural	28.5	0.0	0.0
Capricorn Sandstone Quarries		G-S Precinct K	Limited Development	Extractive Industry		Stanwell Industrial Corridor	55.7	0.0	0.0
Quarry (Toonda Road, Marmor)		Rural	Rural	Extractive Industry		Fitzroy Rural	52.2	0.0	0.0
Livingstone									
Hidden Valley (Yeppoon Road, Barmaryee)		Rural	Rural	Medium Impact Industry		Livingstone Rural Balance	3.4	3.2	3.2
Pineapple Patch		Rural	Rural	Medium Impact Industry		Livingstone Rural Balance	32.0	32.0	32.0
Bondoola		Rural	Rural	Investigation Area		Livingstone Rural Balance	32.2	32.2	32.2
Emu Park - Manns Road		Rural	Rural	Medium Impact Industry		Livingstone Rural Balance	12.0	12.0	12.0
				Low Impact Industry		Livingstone Rural Balance	10.0	10.0	10.0
Yeppoon		Light Industry	Low Impact Industry	Low Impact Industry		Yeppoon and Surrounds	20.6	6.5	4.2
Ready Mix (Arnold Drive, Nerimbera)		Rural	Rural	Extractive Industry		Livingstone Rural Balance	11.6	0.0	0.0
CSR Limited Quarry (School Road, Nerimbera)		Rural	Rural	Extractive Industry		Livingstone Rural Balance	12.9	0.0	0.0
QMAG Magnesite Mine		Rural	Rural	Extractive Industry		Livingstone Rural Balance	TBC	0.0	0.0



Industrial Area	Precinct / Sub Precinct	Existing Zone	RRC Translation	GHD Translation		Sub Area	Total Industrial Supply	Total Industrial Vacant	Total Industrial Developable
				Zone	Precinct				
Mount Morgan									
Brownfield industrial land		Business Zone	District Centre	Township		Mount Morgan Township	1.0	1.0	1.0



6. Industrial Land Strategy

6.1 Key Findings and Implications for Industrial Strategy

Based on the preceding sections of this report, a number of key findings have been identified in relation to industrial land in the Rockhampton Region. These key findings are outlined below and have been considered in terms of the implications on the industrial land strategy.

6.1.1 Emerging Strategic Issues

The review carried out of existing planning policies and studies identified emerging strategic issues affecting industrial land in the Rockhampton Region including:

- ▶ Emergence of land use conflicts due to the encroachment of residential and commercial development, limiting the expansion of industrial areas and / or the type of industrial development;
- ▶ Underutilised industrial land due to the lack of provision of adequate infrastructure including water, sewer and access, in addition to tenure, Native Title and physical constraints;
- ▶ Emergence of rural service industries and illegal industrial uses in rural communities and outskirts of centres;
- ▶ Physical constraints to existing industrial land including watercourse protection, flooding, steep land and significant vegetation; and
- ▶ Mismatches between location of industrial land supply and industrial land demand, in particular in relation to population serving industrial uses.

6.1.2 Industrial Land Demand

By 2031, there is an estimated demand for 180 hectares of industrial land. From a spatial point of view, the majority of this demand is expected to be experienced in some key sub areas including Parkhurst Kawana Industrial Area (58 ha), Stanwell Industrial Corridor (Precincts C-J 54 ha) and Yeppoon and Surrounds (21 ha). The majority of the estimated demand is for both medium impact industry (37.8%) and low impact industry (31.7%). In terms of sequencing, 97 ha or 53.9% of this demand, is expected by 2021.

6.1.3 Industrial Land Supply

There is an estimated 1,675 ha of vacant industrial land supply within the Rockhampton Region, of which 1,122 ha is considered developable. Key supply areas include Gracemere-Stanwell Industrial Precinct (941 ha) and Parkhurst Industrial Area (163 ha). Across the Region, regional flooding and drainage issues are the most constraining factors, however there are some particular issues which are of significance including:



- ▶ Parkhurst Industrial Area is a key supply area for the Region providing 163 ha of developable land, however 106 ha is currently considered restricted due to tenure, Native Title, drainage and infrastructure provision (access and stormwater) issues. In addition, due to residential encroachment threatening the continued use of this area for higher impact uses, the Area may see a transition to the lower impact uses.
- ▶ The Gracemere-Stanwell Industrial Precinct is the key supply area within Fitzroy and the Region, offering 941 ha of developable vacant land. The lack of provision of reticulated services and significant access issues related to the crossing of the railway line are currently restricting the development of this land. An overpass is currently being investigated by Department of Transport and Main Roads to address the access issue.
- ▶ Across the Rockhampton Region, there are also significant industrial uses or expanding / new industrial areas currently not zoned industrial. These include for example warehousing and storage operations in Depot Hill, Hastings Deering at Port Curtis and several extractive industries. Rural servicing industries, for example truck depots, are also prevalent in Precinct K particularly between Precincts B and C of the Gracemere-Stanwell Industrial Precinct.

6.1.4 Industrial Needs Assessment

The supply demand balance analysis indicates that there is an over supply of industrial land across the Region. The industrial needs assessment has identified however the following supply issues, which will require consideration in the industrial land strategy:

- ▶ Rockhampton City Planning Area
 - A shortage of low impact (3 ha) and medium impact (11 ha) industrial land has been identified in the central sub areas of Rockhampton. With resolution of current constraining factors, the Parkhurst Kawana Industrial Corridor Sub Area offers sufficient supply to accommodate these shortages.
 - A shortage of high impact (11 ha) and noxious and hazardous (13 ha) industrial land, in particular in the Parkhurst Kawana Industrial Corridor is anticipated by 2031. It is proposed that these types of industries should be encouraged to locate in the Gracemere-Stanwell Industrial Precinct.
- ▶ Fitzroy Planning Area
 - The Gracemere-Stanwell Industrial Precinct can supply the estimated demand for both Fitzroy Planning Area and the overspill from Rockhampton City Planning Area.
 - The Fitzroy Rural Sub Area is anticipated to experience a shortage of low and medium impact industrial land. Precincts B and C of the Gracemere-Stanwell Industrial Precinct, can accommodate this.
- ▶ Livingstone Planning Area
 - There is a need for 32 ha of additional zoned industrial land within the Livingstone Planning Area by 2031. To yield this supply, double the required



land (64 ha) should be identified. As the majority of the anticipated demand is for low impact industry (additional 17 ha by 2031), it is proposed that this land be identified in proximity to the localities of Yeppoon and Emu Park.

- There is an additional 57 ha of proposed industrial land located within the Livingstone Rural Balance sub area, in particular on the periphery of the Yeppoon and Surrounds sub area which could assist in accommodating this shortage.
- ▶ **Mount Morgan**
 - The Mount Morgan Township sub area will require 1 ha of additional industrial land identified, which is suitable for medium impact industrial uses. It is proposed that this land could be provided through infill or brownfield development within the township.
- ▶ **Intermodal Transport Precinct**
 - Suggested locations for the transport hub include Parkhurst Industrial Area, Gracemere-Stanwell Industrial Precinct (near Kabra), south of Rockhampton Airport and Port Curtis Rural Area.
 - Analysis undertaken by Economic Associates highlights that the sub areas within the Rockhampton Region with the highest demand for transport, logistics & related sectors are Parkhurst-Kawana Industrial Corridor Sub Area and Stanwell Industrial Corridor Sub Area. The potential site for this hub needs to be investigated further.

6.1.5 Proposed Expansion / New Industrial Areas

To accommodate the projected shortages of industrial land identified for the Rockhampton Region in the industrial needs assessment, potential areas for industrial expansion and/or new industrial areas have been proposed in all Planning Areas. In addition, in order to capture those industrial activities occurring outside of existing industrial zoned land, these areas have also been identified as potential expansion and/or new industrial areas. The proposed expansion and/or new industrial areas are as follows:

- ▶ Rockhampton – Airport Industrial Precinct, Depot Hill (existing industrial uses), Port Curtis Rural Area (Hastings Deering site) and Peak Hill Quarry;
- ▶ Fitzroy – Bajool Investigation Area, Precinct K between Precinct B and C of Gracemere-Stanwell Industrial Precinct and extractive industries at Pink Lily, Stanwell and Marmor;
- ▶ Livingstone – Hidden Valley, Pineapple Patch, Bondoola Investigation Area, Manns Road Emu Park, Tanby Road Yeppoon and extractive industries at Kunwarara and Nerimbera; and
- ▶ Mount Morgan – 1 ha of brownfield land within the township of Mount Morgan.

6.2 Preferred Industrial Land Strategy

In consideration of the above key findings of the Industrial Land Use Study, the following elements are proposed to comprise the industrial land strategy:

- ▶ *Consolidation of the current pattern of industrial development.*

The existing supply of vacant industrial zoned land in the Rockhampton Region will accommodate a significant proportion of the industrial land demand projections to 2031. Industrial areas of significance (ie areas that have the most vacant zoned industrial land) include Gracemere-Stanwell Industrial Precinct and Parkhurst Industrial Area.

Consolidation of existing industrial areas will require the resolution of constraining factors including tenure and Native Title, flooding and drainage problems, servicing and access issues.

- ▶ *Adoption of proposed expansion of existing industrial areas and creation of new industrial areas.*

In order to accommodate industrial land demand for the Rockhampton Region to 2031, potential expansion / new industrial areas have been identified. These areas will provide for the shortage of industrial land identified in the industry needs assessment and include:

- Rockhampton – Airport Industrial Precinct, Depot Hill (existing industrial uses), Port Curtis Rural Area (Hastings Deering site) and Peak Hill Quarry;
- Fitzroy – Bajool Investigation Area, Precinct K between Precinct B and C of Gracemere-Stanwell Industrial Precinct and extractive industries at Pink Lily, Stanwell and Marmor;
- Livingstone – Hidden Valley, Pineapple Patch, Bondoola Investigation Area, Manns Road Emu Park, Tanby Road Yeppoon and extractive industries at Kunwarara and Nerimbera; and
- Mount Morgan – 1 ha of brownfield land within the township of Mount Morgan.

- ▶ *Adoption of the proposed zoning framework to align with the Queensland Planning Provisions (version 2.0).*

The adoption of the proposed zoning framework, along with appropriate levels of assessment and performance criteria, will facilitate in clearly defining industrial areas, establishing their strategic role in the Region, ensuring appropriate assessment standards are applied and enable protection from incompatible uses.

- ▶ *Identification of an Intermodal Transport Precinct.*

Further investigations are required to determine the most appropriate location for an intermodal transport precinct in the Rockhampton Region. Pending infrastructure projects including the overpass of the Capricorn Highway at Kabra and the proposed bypass road and rail options for crossing of the flood plain will have a significant bearing on the most suitable location for the intermodal precinct.



6.3 Conclusions and Recommendations

GHD recommend Council adopt the strategic goals of the preferred industrial land strategy in the drafting of the new Rockhampton Regional Council Planning Scheme.



Appendix A

Rockhampton Region Industrial Study

Prepared by Economic Associates

Rockhampton Region Industrial Study

Final Report

December 2010



ECONOMIC ASSOCIATES

Rockhampton Region Industrial Study

Final Report

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EXECUTIVE SUMMARY

Purpose of Study

Rockhampton Regional Council commissioned GHD Pty Ltd in association with Economic Associates Pty Ltd in September 2010 to prepare the Rockhampton Region Industrial Study. The purpose of the Industry Study is to:

- Estimate future industrial land demand by key land use categories, based on the employment projections by two digit ANZSIC provided in the Economic & Employment Study; and
- Investigate the demand for an intermodal transport facility within Rockhampton Regional Council.

The gross industrial land estimates within this report will provide the basis for planning sustainable growth of the region's industrial areas.

Definition of Sub Areas

A total of 21 sub areas were defined within Rockhampton Regional Council based on existing and planned activity within Rockhampton Regional Council and its component planning areas. The sub areas were defined based on Census collection district boundaries, the smallest geographic area defined in the Australian Standard Geographical Classification.

The sub areas within each planning area are as follows:

- Fitzroy planning area:
 - Gracemere;
 - Stanwell Industrial Corridor; and
 - Fitzroy Rural;
- Livingstone planning area:
 - Emu Park and Surrounds;
 - Kinka Beach and Surrounds;
 - Livingstone Rural Balance;
 - The Caves/Rockyview; and
 - Yeppoon and Surrounds;
- Mount Morgan planning area:
 - Mount Morgan Township; and
 - Mount Morgan Rural;
- Rockhampton planning area:
 - Airport;
 - CBD;
 - North Rockhampton Balance;

- North Rockhampton Commercial Corridor;
- North Rockhampton Industrial;
- North Rockhampton Residential;
- Parkhurst - Kawana Industrial Corridor;
- South Rockhampton Industrial;
- South Rockhampton Balance;
- South Rockhampton Commercial Corridor; and
- South Rockhampton Residential.

Chapter 2 of the report provides maps outlining the geographic boundaries of each sub area.

Employment by Sub Area

Within Rockhampton Regional Council, the key areas of industrial employment are:

- Parkhurst Kawana Industrial Corridor (3,670 industrial employees in 2010);
- South Rockhampton Industrial (1,321 industrial employees in 2010);
- Yeppoon and Surrounds (862 industrial employees in 2010);
- CBD (839 employees in 2010); and
- North Rockhampton Industrial (821 employees in 2010).

Over the next 21 years to 2031, the Stanwell Industrial Corridor is anticipated to record significant growth in industrial employment, increasing at an average annual rate of 5.1% to 1,453 industrial employees by 2031.

Table E.1 below provides a summary of the projected industrial employment within each of the sub areas in Rockhampton Regional Council between 2010 and 2031.

Table E.1: Projected Employment in Industrial Sectors by Sub Area, 2010-2031

	Projected Employment							Projected % of Total Employment						
	2010	2011	2016	2021	2026	2031	Ave. Ann Growth, 2010-31	2010	2011	2016	2021	2026	2031	Ave. Ann Growth, 2010-31
Fitzroy Planning Area														
Gracemere	245	247	252	266	281	300	1.0%	20.2%	19.6%	18.5%	16.9%	15.7%	14.7%	-0.3%
Stanwell Industrial Corridor	469	496	600	839	1,123	1,453	5.5%	67.3%	68.2%	71.5%	76.9%	80.8%	83.7%	0.8%
Fitzroy Rural	29	31	36	50	65	84	5.2%	7.0%	7.0%	7.4%	8.8%	10.2%	11.5%	0.2%
Livingstone Planning Area														
Emu Park & Surrounds	0	0	0	0	0	0	n.a.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kinka Beach & Surrounds	111	113	120	128	136	144	1.3%	47.3%	47.2%	47.1%	46.8%	46.4%	46.2%	-0.1%
Livingstone Rural Balance	630	654	729	803	885	968	2.1%	39.5%	39.6%	40.1%	40.2%	40.4%	40.5%	0.0%
The Caves / Rockyview	41	42	44	46	48	50	0.9%	10.4%	10.3%	10.0%	9.6%	9.2%	8.8%	-0.1%
Yeppoon & Surrounds	862	895	998	1,100	1,213	1,326	2.1%	17.7%	17.8%	18.2%	18.2%	18.3%	18.3%	0.0%
Mount Morgan Planning Area														
Mount Morgan Township	27	29	33	37	41	46	2.5%	6.6%	6.7%	7.2%	7.7%	8.1%	8.6%	0.1%
Mount Morgan Rural	18	18	18	19	19	20	0.5%	71.0%	66.7%	57.9%	52.6%	48.0%	44.4%	-1.3%
Rockhampton Planning Area														
Airport	183	185	189	192	194	197	0.3%	33.0%	32.8%	32.4%	32.3%	32.2%	32.0%	-0.1%
CBD	839	840	845	847	850	852	0.1%	11.2%	11.0%	10.6%	10.4%	10.2%	10.0%	-0.1%
North Rockhampton Balance	0	0	0	0	0	0	n.a.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
North Rockhampton Commercial Corridor	423	427	439	444	450	457	0.4%	10.3%	10.2%	10.1%	10.0%	9.9%	9.8%	0.0%
North Rockhampton Industrial	821	830	853	864	876	889	0.4%	47.1%	47.0%	46.9%	46.8%	46.7%	46.6%	0.0%
North Rockhampton Residential	637	639	644	646	648	651	0.1%	15.5%	15.3%	14.9%	14.6%	14.4%	14.2%	-0.1%
Parkhurst - Kawana Industrial Corridor	3,670	3,801	4,140	4,304	4,471	4,662	1.1%	68.3%	68.7%	69.7%	70.1%	70.6%	71.0%	0.1%
South Rockhampton Industrial	1,321	1,344	1,402	1,431	1,460	1,492	0.6%	72.9%	72.9%	73.0%	73.0%	73.1%	73.1%	0.0%
South Rockhampton Balance	155	157	161	164	166	169	0.4%	84.7%	84.6%	84.3%	84.2%	84.2%	84.0%	0.0%
South Rockhampton Commercial Corridor	640	644	656	662	667	674	0.2%	18.9%	18.7%	18.2%	18.0%	17.8%	17.5%	-0.1%
South Rockhampton Residential	81	83	87	90	92	95	0.7%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	0.0%

Source: Rockhampton Economic Development & Employment Study

Gross Incremental Land Demand by Sub Area

Gross incremental land demand estimates for each of the sub areas in Rockhampton Regional Council is presented in Section 3.5 of the report.

Within Rockhampton Regional Council, gross incremental industrial land demand is highest within the following industrial areas:

- Parkhurst-Kawana Industrial Corridor (demand for an additional 58.3 hectares by 2031);
- Stanwell Industrial Corridor (demand for an additional 54.4 hectares by 2031); and
- Yeppoon and Surrounds (demand for an additional 21.1 hectares by 2031).

Table E.2 below provides a summary of the projected gross incremental demand within the above industrial areas between 2011 and 2031.

Table E.2: Gross Incremental Land Demand, Rockhampton Regional Council, 2011-2031

	2011	2016	2021	2026	2031
Parkhurst-Kawana Industrial Corridor					
Low impact Industry	2.5	8.6	10.0	11.3	13.0
Medium impact industry	3.4	11.8	16.9	22.2	28.1
High impact industry	0.7	2.6	4.2	5.9	7.8
Noxious & hazardous industry	1.1	4.1	5.8	7.6	9.5
Total	7.6	27.2	37.0	47.0	58.3
Stanwell Industrial Corridor					
Low impact Industry	0.5	2.1	6.0	10.5	15.7
Medium impact industry	0.7	3.3	8.2	13.9	20.4
High impact industry	0.1	0.7	2.4	4.5	7.1
Noxious & hazardous industry	0.3	1.5	4.1	7.4	11.3
Total	1.5	7.6	20.7	36.3	54.4
Yeppoon and Surrounds					
Low impact Industry	0.7	2.7	5.4	8.4	11.5
Medium impact industry	0.3	1.1	1.8	2.6	3.3
High impact industry	0.3	1.2	1.8	2.4	2.9
Noxious & hazardous industry	0.3	1.1	1.8	2.6	3.3
Total	1.5	6.1	10.8	15.9	21.1

Source: Economic Associates estimates

Gross Incremental Land Demand - Transport & Logistics Related Sectors

The industrial sectors which directly and indirectly rely on transport and logistics uses are:

- Road transport;
- Rail transport;
- Warehousing and storage services;
- Petroleum and coal product manufacturing;
- Motor vehicle and motor vehicle parts retailing;
- Basic material wholesaling;
- Machinery and equipment wholesaling;

- Motor vehicle and motor vehicle parts wholesaling;
- Grocery, liquor and tobacco product wholesaling;
- Other goods wholesaling; and
- Primary metal and metal product manufacturing.

By 2031, gross incremental land demand within transport and logistics and related sectors is projected to be:

- 32.0 hectares in the Parkhurst-Kawana Industrial Corridor;
- 30.0 hectares in the Stanwell Industrial Corridor; and
- 6.3 hectares in Yeppoon and Surrounds.

While Yeppoon and Surrounds is the only area projected to record growth in the incidence of gross incremental land demand within transport and logistics and related sectors, the proportion of total land demand within these sectors is projected to be significantly higher in Parkhurst-Kawana Industrial Corridor and the Stanwell Industrial Corridor.

Table E.3: Gross Incremental Land Demand, Transport, Logistics & Related Sectors, 2011-2031

	2011	2016	2021	2026	2031
Gross Incremental Land Demand - Transport & Logistics & Related Sectors					
Parkhurst-Kawana Industrial Corridor	4.4	15.3	20.5	25.9	32.0
Stanwell Industrial Corridor	0.9	4.6	11.8	20.2	30.0
Yeppoon & Surrounds	0.4	1.6	3.1	4.7	6.3
% of Total Gross Incremental Land Demand - Transport & Logistics & Related Sectors					
Parkhurst-Kawana Industrial Corridor	57.4%	56.1%	55.5%	55.1%	54.9%
Stanwell Industrial Corridor	60.1%	61.3%	57.0%	55.8%	55.1%
Yeppoon & Surrounds	27.0%	27.0%	28.6%	29.4%	30.0%

Source: Economic Associates estimates

Preferred Location for Intermodal Facility within Rockhampton

The areas within Rockhampton Regional Council with the highest demand for transport, logistics & related sectors are:

- Parkhurst-Kawana Industrial Corridor (32.0 hectares by 2031); and
- Stanwell Industrial Corridor (30.0 hectares by 2031).

Both areas are projected to have a similar level of land demand by 2031, suggesting that either represent ideal candidates for an intermodal facility within Rockhampton Regional Council.

The Parkhurst-Kawana Industrial Corridor is located to the north of Rockhampton CBD. However, it is anticipated that a significant amount of freight to an intermodal facility with Rockhampton would originate from the southern and central Bowen Basin, which are accessed via the Capricorn Highway, located south west of Rockhampton City.

If an intermodal facility was to be located within the northern half of Rockhampton, oversize loads would have to pass through Rockhampton CBD, which is not considered an optimal outcome.

The Stanwell Industrial Corridor, on the other hand, is located to the south of Rockhampton CBD and as such, does not face this same constraint. While the Stanwell Industrial Corridor has faced access issues given the need to cross the Central Railway, a major coal haulage route, via at-grade crossings, the State Government has recently committed \$10 million to the construction of a railway overpass to the Stanwell Industrial Corridor.

1 INTRODUCTION

1.1 Purpose of Study

Rockhampton Regional Council commissioned GHD Pty Ltd in association with Economic Associates Pty Ltd in September 2010 to prepare the Rockhampton Region Industrial Study. The purpose of the Industry Study is to:

- Estimate future industrial land demand by key land use categories, based on the employment projections by two digit ANZSIC provided in the Economic & Employment Study; and
- Investigate the demand for an intermodal transport facility within Rockhampton Regional Council.

The gross industrial land estimates within this report will provide the basis for planning sustainable growth of the region's industrial areas.

1.2 Report Structure

This report is structured as follows:

- Chapter 1: Introduction: This section outlines the purpose of the study and report structure;
- Chapter 2: Major Findings from Economic & Employment Study: This section provides an overview of the defined sub areas and a summary of projected industrial employment within each sub area;
- Chapter 3: Projected Industrial Land Demand: This section of the report utilises the industrial employment projections to estimate gross land demand for low impact industry, medium impact industry, high impact industry and noxious and hazardous industry; and
- Chapter 4: Demand for Intermodal Transport Facility: This section of the report discusses the demand for an intermodal transport facility, based on the land demand for transport & logistics activity and related industries and determines the most appropriate location within Rockhampton Regional Council for such a facility.

2 MAJOR FINDINGS FROM ECONOMIC & EMPLOYMENT STUDY

This section of the report provides a brief outline of the major findings from the Economic & Employment Study, specifically in regards to industrial employment.

2.1 Definition of Sub Areas

A total of 21 sub areas were defined within Rockhampton Regional Council based on existing and planned activity within Rockhampton Regional Council and its component planning areas. The sub areas were defined based on Census collection district boundaries, the smallest geographic area defined in the Australian Standard Geographical Classification.

The sub areas within each planning area are as follows:

- Fitzroy planning area:
 - Gracemere;
 - Stanwell Industrial Corridor; and
 - Fitzroy Rural;
- Livingstone planning area:
 - Emu Park and Surrounds;
 - Kinka Beach and Surrounds;
 - Livingstone Rural Balance;
 - The Caves/Rockyview; and
 - Yeppoon and Surrounds;
- Mount Morgan planning area:
 - Mount Morgan Township; and
 - Mount Morgan Rural;
- Rockhampton planning area:
 - Airport;
 - CBD;
 - North Rockhampton Balance;
 - North Rockhampton Commercial Corridor;
 - North Rockhampton Industrial;
 - North Rockhampton Residential;
 - Parkhurst - Kawana Industrial Corridor;
 - South Rockhampton Industrial;

- South Rockhampton Balance;
- South Rockhampton Commercial Corridor; and
- South Rockhampton Residential.

Figure 2.1 outlines the geographic boundaries of the sub areas identified within Rockhampton Regional Council. Figure 2.2 provides a detailed map of the geographic boundaries of the sub areas within Rockhampton planning area.

Figure 2.1: Rockhampton Regional Council Sub Areas

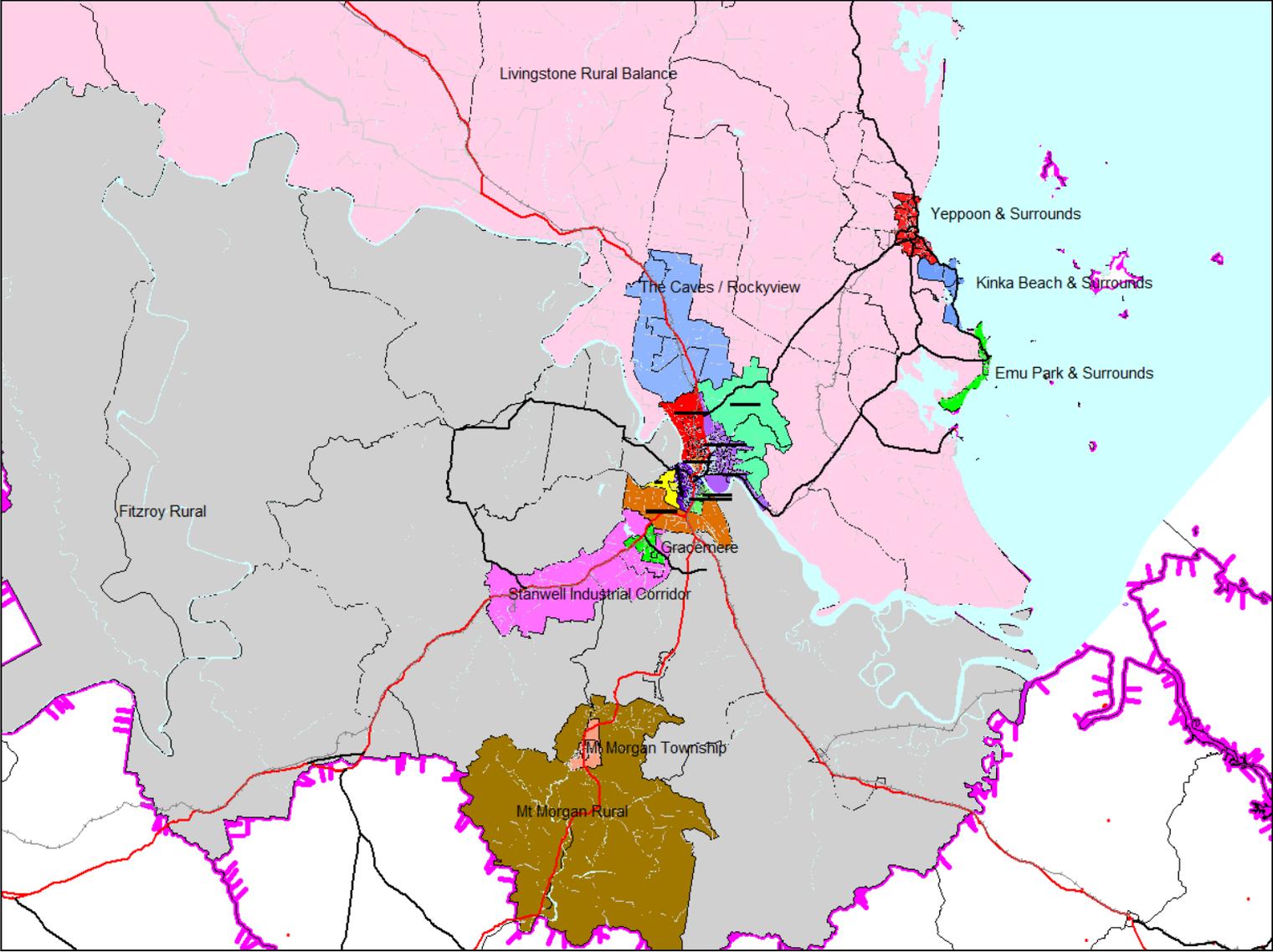
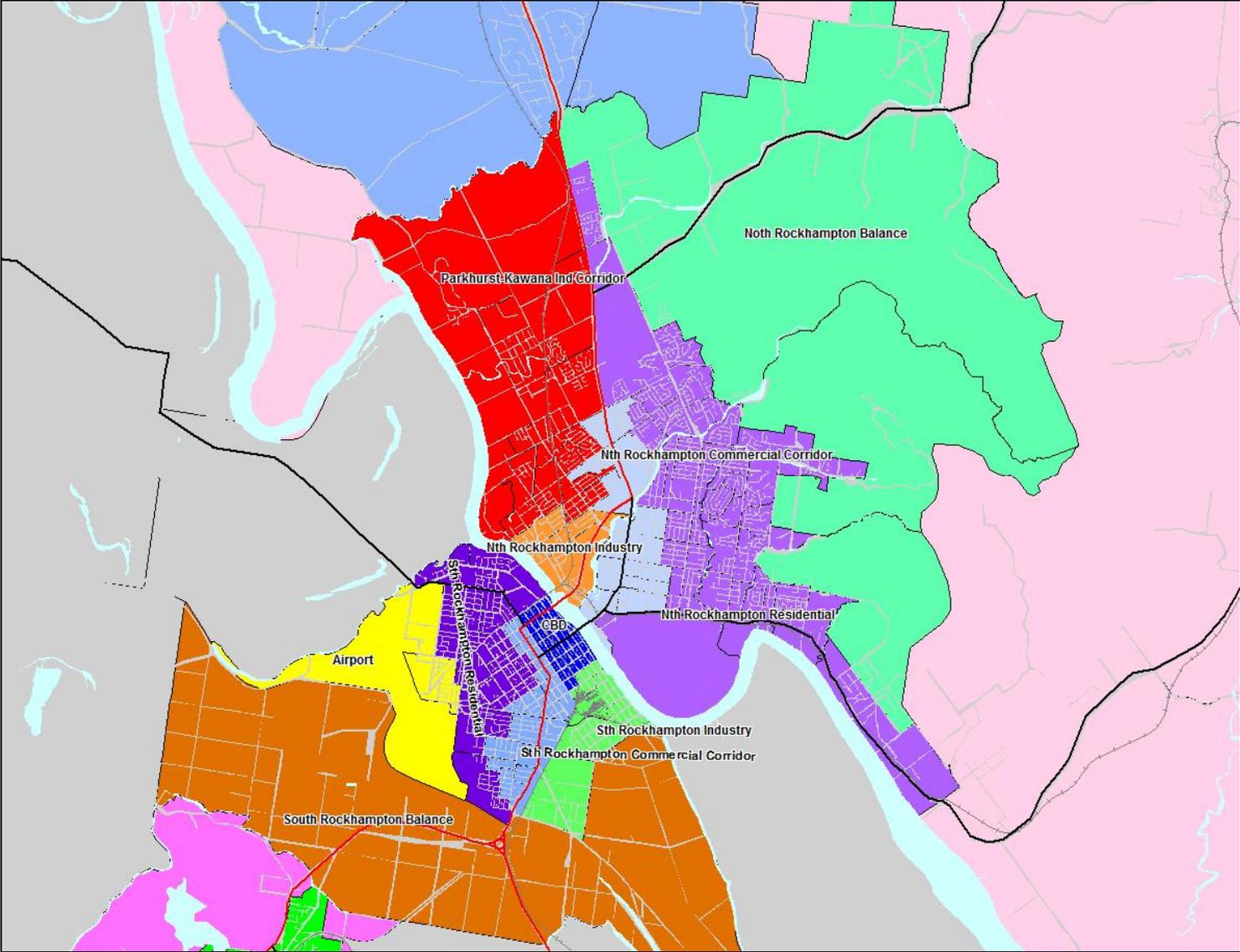


Figure 2.2: Rockhampton Planning Area Sub Areas



2.2 Projected Industrial Employment

As outlined in Chapter 6 of the Economic & Employment Study, the two digit ANZSIC sectors included within the industrial classification are:

- Food product manufacturing;
- Beverage and tobacco product manufacturing;
- Textile, leather, clothing and footwear manufacturing;
- Wood product manufacturing;
- Pulp, paper and converted paper product manufacturing;
- Printing (including production of recorded media);
- Petroleum and coal product manufacturing;
- Basic chemical and chemical product manufacturing;
- Polymer product and rubber product manufacturing;
- Non-metallic mineral product manufacturing;
- Primary metal and metal product manufacturing;
- Fabricated metal product manufacturing;
- Transport equipment manufacturing;
- Machinery and equipment manufacturing;
- Furniture and other manufacturing;
- Construction services;
- Basic material wholesaling;
- Machinery and equipment wholesaling;
- Motor vehicle and motor vehicle parts wholesaling;
- Grocery, liquor and tobacco product wholesaling;
- Other goods wholesaling;
- Motor vehicle and motor vehicle parts retailing;
- Road transport;
- Rail transport;
- Postal and courier pick-up and delivery services;
- Transport support services;
- Warehousing and storage services;
- Publishing (except internet and music publishing); and
- Repair and maintenance.

Within Rockhampton Regional Council, the key areas of industrial employment are:

- Parkhurst Kawana Industrial Corridor (3,670 industrial employees in 2010);
- South Rockhampton Industrial (1,321 industrial employees in 2010);
- Yeppoon and Surrounds (862 industrial employees in 2010);
- CBD (839 employees in 2010); and
- North Rockhampton Industrial (821 employees in 2010).

Over the next 21 years to 2031, the Stanwell Industrial Corridor is anticipated to record significant growth in industrial employment, increasing at an average annual rate of 5.1% to 1,453 industrial employees by 2031.

Table 2.1 below provides a summary of the projected industrial employment within each of the sub areas in Rockhampton Regional Council between 2010 and 2031.

Table 2.1: Projected Employment in Industrial Sectors by Sub Area, 2010-2031

	Projected Employment							Projected % of Total Employment						
	2010	2011	2016	2021	2026	2031	Ave. Ann Growth, 2010-31	2010	2011	2016	2021	2026	2031	Ave. Ann Growth, 2010-31
Fitzroy Planning Area														
Gracemere	245	247	252	266	281	300	1.0%	20.2%	19.6%	18.5%	16.9%	15.7%	14.7%	-0.3%
Stanwell Industrial Corridor	469	496	600	839	1,123	1,453	5.5%	67.3%	68.2%	71.5%	76.9%	80.8%	83.7%	0.8%
Fitzroy Rural	29	31	36	50	65	84	5.2%	7.0%	7.0%	7.4%	8.8%	10.2%	11.5%	0.2%
Livingstone Planning Area														
Emu Park & Surrounds	0	0	0	0	0	0	n.a.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kinka Beach & Surrounds	111	113	120	128	136	144	1.3%	47.3%	47.2%	47.1%	46.8%	46.4%	46.2%	-0.1%
Livingstone Rural Balance	630	654	729	803	885	968	2.1%	39.5%	39.6%	40.1%	40.2%	40.4%	40.5%	0.0%
The Caves / Rockyview	41	42	44	46	48	50	0.9%	10.4%	10.3%	10.0%	9.6%	9.2%	8.8%	-0.1%
Yeppoon & Surrounds	862	895	998	1,100	1,213	1,326	2.1%	17.7%	17.8%	18.2%	18.2%	18.3%	18.3%	0.0%
Mount Morgan Planning Area														
Mount Morgan Township	27	29	33	37	41	46	2.5%	6.6%	6.7%	7.2%	7.7%	8.1%	8.6%	0.1%
Mount Morgan Rural	18	18	18	19	19	20	0.5%	71.0%	66.7%	57.9%	52.6%	48.0%	44.4%	-1.3%
Rockhampton Planning Area														
Airport	183	185	189	192	194	197	0.3%	33.0%	32.8%	32.4%	32.3%	32.2%	32.0%	-0.1%
CBD	839	840	845	847	850	852	0.1%	11.2%	11.0%	10.6%	10.4%	10.2%	10.0%	-0.1%
North Rockhampton Balance	0	0	0	0	0	0	n.a.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
North Rockhampton Commercial Corridor	423	427	439	444	450	457	0.4%	10.3%	10.2%	10.1%	10.0%	9.9%	9.8%	0.0%
North Rockhampton Industrial	821	830	853	864	876	889	0.4%	47.1%	47.0%	46.9%	46.8%	46.7%	46.6%	0.0%
North Rockhampton Residential	637	639	644	646	648	651	0.1%	15.5%	15.3%	14.9%	14.6%	14.4%	14.2%	-0.1%
Parkhurst - Kawana Industrial Corridor	3,670	3,801	4,140	4,304	4,471	4,662	1.1%	68.3%	68.7%	69.7%	70.1%	70.6%	71.0%	0.1%
South Rockhampton Industrial	1,321	1,344	1,402	1,431	1,460	1,492	0.6%	72.9%	72.9%	73.0%	73.0%	73.1%	73.1%	0.0%
South Rockhampton Balance	155	157	161	164	166	169	0.4%	84.7%	84.6%	84.3%	84.2%	84.2%	84.0%	0.0%
South Rockhampton Commercial Corridor	640	644	656	662	667	674	0.2%	18.9%	18.7%	18.2%	18.0%	17.8%	17.5%	-0.1%
South Rockhampton Residential	81	83	87	90	92	95	0.7%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	0.0%

Source: Rockhampton Economic Development & Employment Study

3 PROJECTED INDUSTRIAL LAND DEMAND

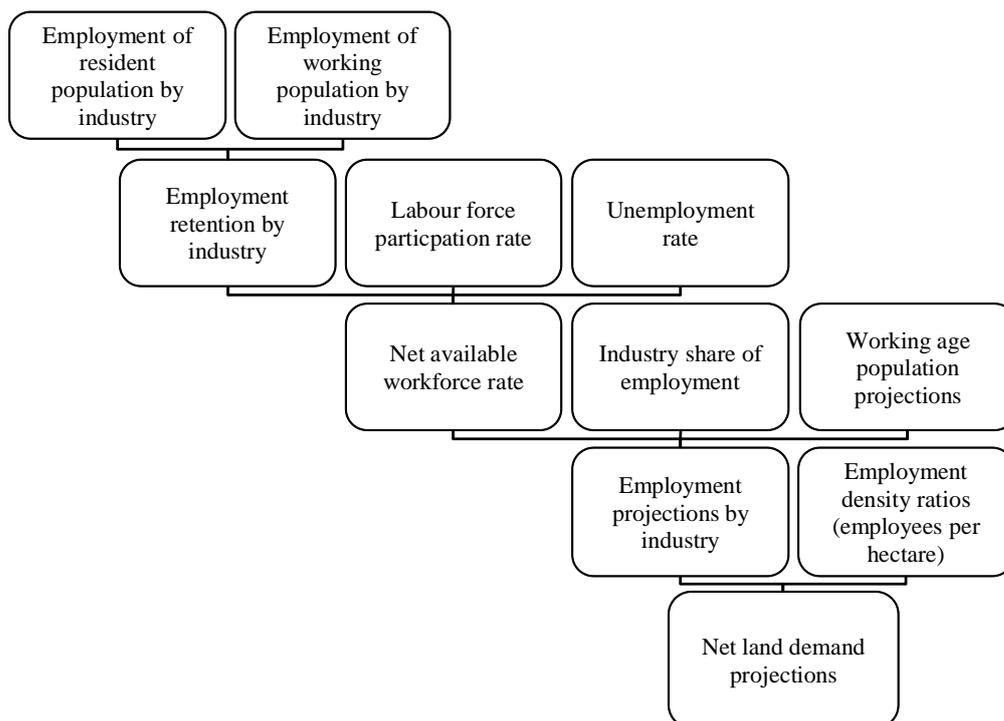
3.1 Methodology

Industrial land demand projections are derived by applying employment density ratios (employees per hectare) to employment projections for those industry sectors that utilise industrial land. The application of employment density ratios to employment projections generates net (or allotment) industrial land demand. Net industrial land demand projections are converted to gross land demand projections by making allowances for roads, infrastructure services and open space areas.

The incremental land demand, that demand post 2010, represents future demand or demand over and above land already taken up for industrial uses. Incremental land demand can also be described as the land take-up rate.

Figure 3.1 below illustrates the process of converting employment projections to land demand projections as described above.

Figure 3.1: Process of converting employment rate projections to land demand projections



3.2 Employment Density Ratios

Industrial employment has been allocated to three categories, based on the definitions provided in the Draft Queensland Government Planning Provisions, namely

- Low impact industry – Premises used for low impact industrial activities which have minimal impacts on non-industrial uses and where impacts such as noise and air emissions are able to be readily mitigated;
- Medium impact industry – Premises used for industrial activities that have moderate impacts on non-industrial uses and where impacts such as noise and air emissions are required to be mitigated; and
- High impact industry – Premises used for industrial activities which have significant off-site impacts such as noise and air emissions.

Industrial land demand projections have been derived from employment projections and employment density ratios for industry sectors which utilise industrial land. Employment density ratios were determined through consultation with State government departments and agencies, local governments, industry (or industrial land users) and property developers and agencies.

For the purpose of this analysis, the assumed employment densities have been kept constant throughout the projection period. Table 3.1 below summarises the assumed employment density ratios throughout Rockhampton Regional Council.

Table 3.1: Assumed Employment Density Ratios (employees / ha), 2010-2031

Industry Type	Employment Density
Low Impact Industry	
Textile, Leather, Clothing & Footwear Manufacturing	45
Printing (including Reproduction of Recorded Media)	40
Construction Services	30
Basic Material Wholesaling	20
Machinery & Equipment Wholesaling	20
Motor Vehicle & Motor Vehicle Parts Wholesaling	20
Grocery, Liquor & Tobacco Product Wholesaling	25
Other Goods Wholesaling	25
Motor Vehicle & Motor Vehicle Parts Retailing	30
Warehousing & Storage Services	20
Publishing (except Internet & Music Publishing)	40
Repair & Maintenance	35
Medium Impact Industry	
Polymer Product & Rubber Product Manufacturing	30
Fabricated Metal Product Manufacturing	35
Transport Equipment Manufacturing	45
Machinery & Equipment Manufacturing	45
Furniture & Other Manufacturing	35
Road Transport	25
Rail Transport	10
Postal & Courier Pick-up & Delivery Services	35
Transport Support Services	30
High Impact Industry	
Food Product Manufacturing	40
Beverage & Tobacco Product Manufacturing	40
Wood Product Manufacturing	35

Industry Type	Employment Density
Pulp, Paper & Converted Paper Product Manufacturing	40
Petroleum & Coal Product Manufacturing	35
Basic Chemical & Chemical Product Manufacturing	35
Non-Metallic Mineral Product Manufacturing	20
Primary Metal & Metal Product Manufacturing	25

Source: Informed by consultation with businesses within the Wide Bay - Burnett region

3.3 Net Industrial Land Demand

3.3.1 Fitzroy Planning Area

In the Fitzroy planning area, net industrial land demand is projected to increase from 29.9 hectares in 2010 to 72.6 hectares in 2031, with the majority of demand within the Stanwell Industrial Corridor (57.3 hectares by 2031).

Table 3.2 below summarises net industrial land demand estimates for the Fitzroy planning area.

Table 3.2: Net Industrial Land Demand, Fitzroy Planning Area, 2010-31

	2010	2011	2016	2021	2026	2031
<u>Gracemere</u>						
Low impact Industry	3.7	3.7	3.8	3.9	4.2	4.4
Medium impact industry	4.5	4.6	4.7	4.9	5.1	5.4
High impact industry	1.7	1.7	1.7	1.9	2.0	2.2
Total	9.9	9.9	10.2	10.7	11.3	12.0
<u>Stanwell Industrial Corridor</u>						
Low impact Industry	7.0	7.4	8.8	12.2	16.1	20.6
Medium impact industry	8.7	9.1	11.0	14.6	18.7	23.4
High impact industry	3.2	3.4	4.4	6.7	9.7	13.3
Total	18.9	20.0	24.2	33.5	44.5	57.3
<u>Fitzroy Rural</u>						
Low impact Industry	0.4	0.5	0.5	0.7	0.9	1.2
Medium impact industry	0.5	0.6	0.7	0.9	1.1	1.4
High impact industry	0.2	0.2	0.3	0.4	0.6	0.8
Total	1.2	1.2	1.5	2.0	2.6	3.3
<u>Fitzroy Planning Area</u>						
Low impact Industry	11.1	11.5	13.1	16.8	21.2	26.2
Medium impact industry	13.7	14.3	16.4	20.3	24.9	30.1
High impact industry	5.1	5.3	6.4	9.0	12.3	16.3
Total	29.9	31.1	35.9	46.1	58.4	72.6

Source: Economic Associates estimates

3.3.2 Livingstone Planning Area

In the Livingstone planning area, net industrial land demand is projected to increase from 53.0 hectares in 2010 to 81.0 hectares in 2031, with the majority of demand within Yeppoon and Surrounds (43.2 hectares by 2031) and Livingstone Rural Balance (31.5 hectares by 2031).

Table 3.3 below summarises net industrial land demand estimates for the Livingstone planning area.

Table 3.3: Net Industrial Land Demand, Livingstone Planning Area, 2010-31

	2010	2011	2016	2021	2026	2031
<u>Emu Park & Surrounds</u>						
Low impact Industry	0.0	0.0	0.0	0.0	0.0	0.0
Medium impact industry	0.0	0.0	0.0	0.0	0.0	0.0
High impact industry	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.0
<u>Kinka Beach & Surrounds</u>						
Low impact Industry	1.8	1.9	2.0	2.2	2.3	2.5
Medium impact industry	0.6	0.6	0.7	0.7	0.8	0.8
High impact industry	1.1	1.1	1.2	1.2	1.3	1.3
Total	3.6	3.6	3.9	4.1	4.4	4.7
<u>Livingstone Rural Balance</u>						
Low impact Industry	10.5	10.9	12.1	13.7	15.5	17.4
Medium impact industry	3.6	3.8	4.2	4.6	5.0	5.4
High impact industry	6.2	6.5	7.2	7.7	8.2	8.8
Total	20.3	21.1	23.5	26.0	28.7	31.5
<u>The Caves / Rockyview</u>						
Low impact Industry	0.7	0.7	0.7	0.8	0.8	0.9
Medium impact industry	0.2	0.2	0.3	0.3	0.3	0.3
High impact industry	0.4	0.4	0.4	0.4	0.5	0.5
Total	1.3	1.4	1.4	1.5	1.5	1.6
<u>Yeppoon & Surrounds</u>						
Low impact Industry	14.3	14.9	16.6	18.8	21.2	23.8
Medium impact industry	5.0	5.1	5.7	6.2	6.8	7.4
High impact industry	8.5	8.8	9.8	10.6	11.3	12.0
Total	27.8	28.8	32.2	35.6	39.3	43.2
<u>Livingstone Planning Area</u>						
Low impact Industry	27.3	28.3	31.4	35.4	39.9	44.6
Medium impact industry	9.4	9.8	10.9	11.8	12.8	13.8
High impact industry	16.2	16.8	18.7	19.9	21.3	22.6
Total	53.0	54.9	60.9	67.1	74.0	81.0

Source: Economic Associates estimates

3.3.3 Mount Morgan Planning Area

In the Mount Morgan planning area, net industrial land demand is projected to increase from 1.6 hectares in 2010 to 2.3 hectares in 2031, with the majority of growth within Mount Morgan Township (increasing from 1.0 hectares in 2010 and 1.6 hectares in 2031).

Table 3.4 below summarises net industrial land demand estimates for the Mount Morgan planning area.

Table 3.4: Net Industrial Land Demand, Mount Morgan Planning Area, 2010-31

	2010	2011	2016	2021	2026	2031
<u>Mount Morgan Township</u>						
Low impact Industry	0.5	0.5	0.6	0.7	0.8	0.8
Medium impact industry	0.3	0.3	0.4	0.4	0.5	0.5
High impact industry	0.2	0.2	0.2	0.2	0.3	0.3

	2010	2011	2016	2021	2026	2031
Total	1.0	1.0	1.2	1.3	1.5	1.6
<u>Mount Morgan Rural</u>						
Low impact Industry	0.3	0.3	0.3	0.3	0.4	0.4
Medium impact industry	0.2	0.2	0.2	0.2	0.2	0.2
High impact industry	0.1	0.1	0.1	0.1	0.1	0.1
Total	0.6	0.6	0.6	0.7	0.7	0.7
<u>Mount Morgan Planning Area</u>						
Low impact Industry	0.8	0.8	0.9	1.0	1.1	1.2
Medium impact industry	0.5	0.5	0.6	0.6	0.7	0.7
High impact industry	0.3	0.3	0.3	0.3	0.4	0.4
Total	1.6	1.7	1.8	2.0	2.1	2.3

Source: Economic Associates estimates

3.3.4 Rockhampton Planning Area

In the Rockhampton planning area, net industrial land demand is projected to increase from 367.7 hectares in 2010 to 423.8 hectares in 2031, with the key areas of demand including:

- Parkhurst-Kawana Industrial Corridor (demand for 194.6 hectares by 2031);
- South Rockhampton Industrial (demand for 62.4 hectares by 2031); and
- North Rockhampton Industrial (demand for 37.2 hectares by 2031).

Table 3.5 below summarises net industrial land demand estimates for the Rockhampton planning area.

Table 3.5: Net Industrial Land Demand, Rockhampton Planning Area, 2010-31

	2010	2011	2016	2021	2026	2031
<u>Airport</u>						
Low impact Industry	3.0	3.0	3.1	3.1	3.1	3.1
Medium impact industry	3.5	3.5	3.6	3.7	3.7	3.8
High impact industry	1.2	1.2	1.2	1.3	1.3	1.3
Total	7.7	7.7	7.9	8.0	8.1	8.2
<u>CBD</u>						
Low impact Industry	13.6	13.7	13.7	13.7	13.7	13.8
Medium impact industry	16.1	16.1	16.2	16.3	16.3	16.4
High impact industry	5.5	5.5	5.5	5.5	5.6	5.6
Total	35.2	35.2	35.4	35.5	35.6	35.7
<u>North Rockhampton Balance</u>						
Low impact Industry	0.0	0.0	0.0	0.0	0.0	0.0
Medium impact industry	0.0	0.0	0.0	0.0	0.0	0.0
High impact industry	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.0
<u>North Rockhampton Commercial Corridor</u>						
Low impact Industry	6.9	6.9	7.1	7.1	7.2	7.2
Medium impact industry	8.1	8.2	8.4	8.5	8.7	8.8
High impact industry	2.7	2.8	2.9	3.0	3.0	3.1
Total	17.7	17.9	18.4	18.6	18.9	19.1

	2010	2011	2016	2021	2026	2031
<u>North Rockhampton Industrial</u>						
Low impact Industry	13.3	13.5	13.8	13.9	13.9	14.0
Medium impact industry	15.7	15.9	16.3	16.6	16.9	17.1
High impact industry	5.3	5.4	5.6	5.7	5.9	6.1
Total	34.4	34.8	35.7	36.2	36.7	37.2
<u>North Rockhampton Residential</u>						
Low impact Industry	10.4	10.4	10.4	10.5	10.5	10.5
Medium impact industry	12.2	12.2	12.3	12.4	12.4	12.5
High impact industry	4.1	4.2	4.2	4.2	4.3	4.3
Total	26.7	26.8	27.0	27.1	27.2	27.3
<u>Parkhurst-Kawana Industrial Corridor</u>						
Low impact Industry	59.6	61.7	66.5	67.5	68.3	69.4
Medium impact industry	70.4	72.8	79.0	82.7	86.5	90.8
High impact industry	23.9	24.8	27.6	29.7	31.9	34.3
Total	153.9	159.3	173.2	179.9	186.8	194.6
<u>South Rockhampton Industrial</u>						
Low impact Industry	21.5	21.8	22.7	22.8	23.0	23.2
Medium impact industry	25.3	25.8	26.8	27.5	28.1	28.9
High impact industry	8.6	8.8	9.2	9.6	10.0	10.4
Total	55.4	56.3	58.7	59.9	61.1	62.4
<u>South Rockhampton Balance</u>						
Low impact Industry	2.5	2.5	2.6	2.6	2.6	2.7
Medium impact industry	3.0	3.0	3.1	3.1	3.2	3.3
High impact industry	1.0	1.0	1.1	1.1	1.1	1.2
Total	6.5	6.6	6.8	6.9	6.9	7.1
<u>South Rockhampton Commercial Corridor</u>						
Low impact Industry	10.4	10.5	10.6	10.7	10.7	10.7
Medium impact industry	12.3	12.4	12.6	12.7	12.8	13.0
High impact industry	4.2	4.2	4.3	4.4	4.4	4.5
Total	26.8	27.0	27.5	27.7	28.0	28.2
<u>South Rockhampton Residential</u>						
Low impact Industry	1.3	1.3	1.4	1.4	1.4	1.4
Medium impact industry	1.5	1.6	1.7	1.7	1.8	1.8
High impact industry	0.5	0.5	0.6	0.6	0.6	0.7
Total	3.4	3.5	3.7	3.7	3.8	4.0
<u>Rockhampton Planning Area</u>						
Low impact Industry	142.5	145.3	152.0	153.3	154.5	156.0
Medium impact industry	168.1	171.5	180.1	185.2	190.4	196.4
High impact industry	57.1	58.4	62.2	65.1	68.2	71.5
Total	367.7	375.2	394.3	403.6	413.1	423.8

Source: Economic Associates estimates

3.4 Preliminary Gross Industrial Land Demand

To determine gross industrial land demand, the following calculations are made:

1. Prepare employment projections for industrial sectors.

2. Divide employment projections by employment density ratios to obtain net industrial land demand projections.
3. Multiply net industrial land demand projections by allowances for services and open space buffers to obtain gross industrial land demand projections.

As stated above gross land demand equals net industrial land demand (i.e. industrial allotment demand) plus allowances made for roads, services and open space.

The requirement for roads and service reserves varies between regions and type of land use. The Department of Business, Industry and Regional Development's (DBIRD)¹ information paper on *Establishing Future Business and Industry Land Requirements and Identifying Strategically Important Sites* indicates that industrial areas require the equivalent of between 5% and 10% of total allotment area for the provision of road and service corridors, and the equivalent of between 30% and 40% of total allotment area for open space and buffers².

Large footprint and general industry uses, and those reliant on heavy vehicle access, are anticipated to require greater provision for roads, reserves and buffers than lower impact areas, such as service industry precincts.

Table 3.6 below summarises the assumptions used in estimating the industrial land requirement over and above allotment areas.

Table 3.6: Allowances for services and open space buffers by industry type

Industry Type	Services	Open Space
Low Impact Industry	5.0%	25.0%
Medium Impact Industry	10.0%	35.0%
High Impact Industry	12.5%	40.0%

Source: Informed by DBIRD (early 1990s) and consultations with Property Services Group (2010)

3.4.1 Fitzroy Planning Area

In the Fitzroy planning area, gross industrial land demand is projected to increase from 42.1 hectares in 2010 to 102.5 hectares in 2031.

Stanwell Industrial Corridor is anticipated to be the key area of demand (81.0 hectares by 2031).

Table 3.7 below summarises preliminary gross industrial land estimates for each of the sub areas within Fitzroy planning area between 2010 and 2031.

Table 3.7: Preliminary Gross Industrial Land Demand Estimates, Fitzroy Planning Area, 2010-31

	2010	2011	2016	2021	2026	2031
<u>Gracemere</u>						
Low impact Industry	4.8	4.8	4.9	5.1	5.4	5.7
Medium impact industry	6.6	6.6	6.8	7.1	7.4	7.8
High impact industry	2.6	2.6	2.7	2.9	3.1	3.4

¹ The Department of Business, Industry and Regional Development was a predecessor to the Department of State Development, Trade and Innovation.

² Consultations with the Coordinator General's Land (Infrastructure) group

	2010	2011	2016	2021	2026	2031
Total	13.9	14.0	14.3	15.0	15.9	16.9
<u>Stanwell Industrial Corridor</u>						
Low impact Industry	9.1	9.6	11.5	15.8	20.9	26.8
Medium impact industry	12.6	13.3	16.0	21.1	27.2	34.0
High impact industry	4.9	5.2	6.7	10.3	14.8	20.2
Total	26.6	28.1	34.1	47.2	62.8	81.0
<u>Fitzroy Rural</u>						
Low impact Industry	0.6	0.6	0.7	0.9	1.2	1.5
Medium impact industry	0.8	0.8	1.0	1.3	1.6	2.0
High impact industry	0.3	0.3	0.4	0.6	0.9	1.2
Total	1.6	1.7	2.1	2.8	3.7	4.7
<u>Fitzroy Planning Area</u>						
Low impact Industry	14.4	15.0	17.0	21.9	27.5	34.0
Medium impact industry	19.9	20.7	23.7	29.5	36.1	43.7
High impact industry	7.8	8.1	9.7	13.7	18.7	24.8
Total	42.1	43.8	50.5	65.1	82.4	102.5

Source: Economic Associates estimates

3.4.2 Livingstone Planning Area

In the Livingstone planning area, gross industrial land demand is projected to increase from 74.0 hectares in 2010 to 112.4 hectares in 2031.

The key areas of demand are projected to be:

- Yeppoon and Surrounds (demand for 59.9 hectares by 2031); and
- Livingstone Rural Balance (demand for 43.7 hectares by 2031).

Table 3.8 below summarises preliminary gross industrial land estimates for each of the sub areas within Livingstone planning area between 2010 and 2031.

Table 3.8: Preliminary Gross Industrial Land Demand Estimates, Livingstone Planning Area, 2010-31

	2010	2011	2016	2021	2026	2031
<u>Emu Park & Surrounds</u>						
Low impact Industry	0.0	0.0	0.0	0.0	0.0	0.0
Medium impact industry	0.0	0.0	0.0	0.0	0.0	0.0
High impact industry	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.0
<u>Kinka Beach & Surrounds</u>						
Low impact Industry	2.4	2.4	2.6	2.8	3.0	3.3
Medium impact industry	0.9	0.9	1.0	1.1	1.1	1.2
High impact industry	1.7	1.7	1.8	1.9	2.0	2.0
Total	5.0	5.1	5.4	5.8	6.1	6.5
<u>Livingstone Rural Balance</u>						
Low impact Industry	13.6	14.1	15.7	17.8	20.1	22.6
Medium impact industry	5.2	5.4	6.1	6.6	7.2	7.8
High impact industry	9.5	9.8	11.0	11.7	12.6	13.3
Total	28.3	29.4	32.8	36.2	39.9	43.7

	2010	2011	2016	2021	2026	2031
<u>The Caves / Rockyview</u>						
Low impact Industry	0.9	0.9	0.9	1.0	1.1	1.1
Medium impact industry	0.3	0.4	0.4	0.4	0.4	0.4
High impact industry	0.6	0.6	0.7	0.7	0.7	0.7
Total	1.9	1.9	2.0	2.1	2.2	2.2
<u>Yeppoon & Surrounds</u>						
Low impact Industry	18.6	19.3	21.6	24.4	27.6	31.0
Medium impact industry	7.2	7.5	8.3	9.1	9.9	10.7
High impact industry	13.0	13.5	15.0	16.1	17.2	18.3
Total	38.8	40.3	44.9	49.6	54.7	59.9
<u>Livingstone Planning Area</u>						
Low impact Industry	35.5	36.8	40.9	46.0	51.8	57.9
Medium impact industry	13.7	14.2	15.7	17.1	18.6	20.1
High impact industry	24.7	25.6	28.5	30.4	32.5	34.4
Total	74.0	76.7	85.1	93.5	102.9	112.4

Source: Economic Associates estimates

3.4.3 Mount Morgan Planning Area

In the Mount Morgan planning area, gross industrial land demand is projected to increase from 2.2 hectares in 2010 to 3.2 hectares in 2031.

The Mount Morgan Township is anticipated to be the key area of demand (2.3 hectares by 2031).

Table 3.9 below summarises preliminary gross industrial land estimates for each of the sub areas within the Mount Morgan planning area between 2010 and 2031.

Table 3.9: Preliminary Gross Industrial Land Demand Estimates, Mount Morgan Planning Area, 2010-31

	2010	2011	2016	2021	2026	2031
<u>Mount Morgan Township</u>						
Low impact Industry	0.7	0.7	0.8	0.9	1.0	1.1
Medium impact industry	0.4	0.5	0.5	0.6	0.7	0.7
High impact industry	0.3	0.3	0.3	0.3	0.4	0.4
Total	1.4	1.4	1.6	1.8	2.0	2.3
<u>Mount Morgan Rural</u>						
Low impact Industry	0.4	0.4	0.4	0.4	0.5	0.5
Medium impact industry	0.3	0.3	0.3	0.3	0.3	0.3
High impact industry	0.2	0.2	0.2	0.2	0.2	0.2
Total	0.9	0.9	0.9	0.9	0.9	1.0
<u>Mount Morgan Planning Area</u>						
Low impact Industry	1.1	1.1	1.2	1.3	1.4	1.6
Medium impact industry	0.7	0.8	0.8	0.9	1.0	1.1
High impact industry	0.4	0.4	0.5	0.5	0.6	0.6
Total	2.2	2.3	2.5	2.7	3.0	3.2

Source: Economic Associates estimates

3.4.4 Rockhampton Planning Area

In the Rockhampton planning area, gross industrial land demand is projected to increase from 516.1 hectares in 2010 to 596.5 hectares in 2031.

The key areas of demand are projected to be:

- Parkhurst – Kawana Industrial Corridor (274.3 hectares by 2031);
- South Rockhampton Industrial (87.8 hectares by 2031); and
- North Rockhampton Industrial (52.3 hectares by 2031).

Table 3.10 below summarises preliminary gross industrial land estimates for each of the sub areas within the Rockhampton planning area between 2010 and 2031.

Table 3.10: Preliminary Gross Industrial Land Demand Estimates, Rockhampton Planning Area, 2010-31

	2010	2011	2016	2021	2026	2031
<u>Airport</u>						
Low impact Industry	3.9	3.9	4.0	4.0	4.0	4.0
Medium impact industry	5.1	5.1	5.3	5.3	5.4	5.5
High impact industry	1.8	1.8	1.9	1.9	2.0	2.0
Total	10.8	10.9	11.1	11.3	11.4	11.6
<u>CBD</u>						
Low impact Industry	17.7	17.8	17.8	17.9	17.9	17.9
Medium impact industry	23.3	23.4	23.5	23.6	23.6	23.7
High impact industry	8.3	8.3	8.4	8.4	8.5	8.5
Total	49.4	49.5	49.7	49.9	50.0	50.2
<u>North Rockhampton Balance</u>						
Low impact Industry	0.0	0.0	0.0	0.0	0.0	0.0
Medium impact industry	0.0	0.0	0.0	0.0	0.0	0.0
High impact industry	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.0
<u>North Rockhampton Commercial Corridor</u>						
Low impact Industry	8.9	9.0	9.2	9.3	9.3	9.4
Medium impact industry	11.7	11.9	12.2	12.4	12.6	12.8
High impact industry	4.2	4.2	4.4	4.5	4.6	4.7
Total	24.9	25.1	25.8	26.1	26.5	26.9
<u>North Rockhampton Industrial</u>						
Low impact Industry	17.3	17.5	18.0	18.0	18.1	18.2
Medium impact industry	22.8	23.1	23.7	24.1	24.4	24.9
High impact industry	8.1	8.2	8.5	8.8	9.0	9.2
Total	48.3	48.8	50.2	50.8	51.5	52.3
<u>North Rockhampton Residential</u>						
Low impact Industry	13.5	13.5	13.6	13.6	13.6	13.6
Medium impact industry	17.7	17.8	17.9	18.0	18.0	18.1
High impact industry	6.3	6.3	6.4	6.4	6.5	6.5
Total	37.5	37.6	37.9	38.0	38.1	38.3
<u>Parkhurst-Kawana Industrial Corridor</u>						
Low impact Industry	77.5	80.1	86.5	87.7	88.8	90.3
Medium impact industry	102.0	105.6	114.6	119.9	125.5	131.7
High impact industry	36.4	37.9	42.1	45.3	48.7	52.4

	2010	2011	2016	2021	2026	2031
Total	216.0	223.6	243.2	253.0	263.0	274.3
<u>South Rockhampton Industrial</u>						
Low impact Industry	27.9	28.4	29.5	29.7	29.9	30.1
Medium impact industry	36.7	37.4	38.9	39.8	40.8	41.9
High impact industry	13.1	13.4	14.1	14.7	15.2	15.9
Total	77.8	79.1	82.5	84.1	85.9	87.8
<u>South Rockhampton Balance</u>						
Low impact Industry	3.3	3.3	3.4	3.4	3.4	3.4
Medium impact industry	4.3	4.4	4.5	4.6	4.6	4.7
High impact industry	1.5	1.6	1.6	1.7	1.7	1.8
Total	9.1	9.2	9.5	9.6	9.8	9.9
<u>South Rockhampton Commercial Corridor</u>						
Low impact Industry	13.5	13.6	13.8	13.9	13.9	14.0
Medium impact industry	17.8	17.9	18.2	18.4	18.6	18.8
High impact industry	6.3	6.4	6.5	6.7	6.8	6.9
Total	37.7	37.9	38.6	38.9	39.3	39.7
<u>South Rockhampton Residential</u>						
Low impact Industry	1.7	1.7	1.8	1.8	1.9	1.9
Medium impact industry	2.2	2.3	2.4	2.5	2.6	2.7
High impact industry	0.8	0.8	0.9	0.9	1.0	1.0
Total	4.8	4.9	5.1	5.3	5.4	5.6
<u>Rockhampton Planning Area</u>						
Low impact Industry	185.3	188.9	197.6	199.3	200.8	202.8
Medium impact industry	243.8	248.7	261.1	268.5	276.1	284.7
High impact industry	87.0	89.0	94.9	99.3	103.9	109.0
Total	516.1	526.6	553.6	567.1	580.9	596.5

Source: Economic Associates estimates

3.5 Gross Industrial Land Demand - Allocation of Noxious & Hazardous Industry

3.5.1 Proportion of Noxious & Hazardous Activity

In the Draft Queensland Planning Provisions, noxious and hazardous industries are defined as:

Premises used for industrial activities that have extreme, adverse impacts on other land uses. These impacts include air, noise and water emissions, the potential for fire, explosions and toxic releases.

A review of ANZSIC data at the three digit level identified the following sectors have a noxious and hazardous component:

- Food product manufacturing:
 - Meat and meat product manufacturing;
 - Dairy product manufacturing;
 - Oil and fat manufacturing;
- Beverage and tobacco product manufacturing;

- Beverage and malt manufacturing;
- Textile, leather, clothing and footwear manufacturing:
 - Leather and leather product manufacturing;
- Wood product manufacturing:
 - Log sawmilling and timber dressing;
 - Other wood product manufacturing;
- Pulp, paper and converted paper product manufacturing:
 - Paper and paper product manufacturing;
- Non-metallic mineral product manufacturing:
 - Glass and glass product manufacturing;
 - Ceramic product manufacturing;
 - Cement, lime, plaster and concrete product manufacturing;
- Primary metal and metal product manufacturing:
 - Iron and steel manufacturing;
 - Basic non-ferrous metal product manufacturing;
 - Non-ferrous basic metal product manufacturing;
- Fabricated metal product manufacturing
 - Structural metal product manufacturing;
- Transport equipment manufacturing:
 - Motor vehicle and part manufacturing;
 - Other transport equipment manufacturing;
- Petroleum and coal product manufacturing:
 - Petroleum refining;
 - Petroleum and coal product manufacturing n.e.c.³;
- Basic chemical and chemical product manufacturing:
 - Basic chemical manufacturing;
 - Other chemical product manufacturing;
- Warehousing and storage services:
 - Storage; and
- Basic material wholesaling:
 - Mineral, metal and chemical wholesaling.

³ n.e.c. – not elsewhere classified

This above list highlights that a proportion of activities within the low impact industry, medium impact industry and high impact industry have a noxious and hazardous component.

To determine the likely proportion of employment within noxious and hazardous industry, business count data at the three digit level from the Australian Bureau of Statistics has been utilised. This data is only available at the three digit level at the state level.

As at June 2007, there were 8,262 enterprises operating within the noxious and hazardous industry sectors in Queensland, including 3,738 non-employing enterprises and 4,524 employing enterprises (refer to Table 3.11 below).

Table 3.11: Number of Enterprises, Noxious & Hazardous Industry Sectors, Queensland, June 2007

	Non-employing	1-19	20-199	200+	Total
Meat & Meat Product Manufacturing	57	60	36	30	183
Dairy Product Manufacturing	30	33	18	3	84
Oil & Fat Manufacturing	21	15	3	0	39
Beverage & Malt Manufacturing	126	57	24	3	210
Leather & Leather Product Manufacturing	75	48	6	3	132
Log Sawmilling & Timber Dressing	129	105	36	0	270
Other Wood Product Manufacturing	585	582	87	3	1,257
Paper & Paper Product Manufacturing	21	69	15	3	108
Glass & Glass Product Manufacturing	42	57	15	3	117
Ceramic Product Manufacturing	66	36	12	0	114
Cement, Lime, Plaster & Concrete Product Manufacturing	105	159	27	6	297
Iron & Steel Manufacturing	198	180	57	6	441
Basic Non-Ferrous Metal Manufacturing	15	15	6	12	48
Non-Ferrous Basic Metal Product Manufacturing	21	36	9	0	66
Structural Metal Product Manufacturing	258	579	138	9	984
Motor Vehicle & Part Manufacturing	393	336	81	3	813
Other Transport Equipment Manufacturing	669	459	69	9	1,206
Petroleum Refining	138	21	3	3	165
Petroleum & Coal Product Manufacturing n.e.c.	6	6	0	0	12
Basic Chemical Manufacturing	45	78	12	0	135
Other Chemical Product Manufacturing	168	183	36	3	390
Storage	183	165	18	0	366
Mineral, Metal & Chemical Wholesaling	387	408	30	0	825
Total	3,738	3,687	738	99	8,262

Source: ABS (2007)

For the purpose of this assessment, it has been assumed that only a proportion of employment within noxious and hazardous industry sectors is considered noxious and hazardous activity.

The following industry sectors are classified as having a hazardous component:

- Petroleum and coal product manufacturing:
 - Petroleum refining;
 - Petroleum and coal product manufacturing n.e.c.⁴;
- Basic chemical and chemical product manufacturing:

⁴ n.e.c. – not elsewhere classified

- Basic chemical manufacturing;
- Other chemical product manufacturing;
- Warehousing and storage services:
 - Storage; and
- Basic material wholesaling:
 - Mineral, metal and chemical wholesaling

For the purposes of this assessment, it has been assumed that only enterprises within the above sectors with ten or more employees would be classified as noxious and hazardous activity. For all other noxious and hazardous industry sectors, it has been assumed that only enterprises with 20 or more employees would be classified as noxious and hazardous activity.

Table 3.12 below provides a summary of the proportion of employment classified as noxious and hazardous within each two digit industry sector.

Table 3.12: Proportion of Employment Classified as Noxious & Hazardous, June 2007

	Total Employment	Estimated Noxious & Hazardous Employment	Estimated % of Noxious & Hazardous Employment
Food Product Manufacturing	43,299	14,520	33.5%
Beverage & Tobacco Manufacturing	4,086	3,390	83.0%
Textile, Leather, Clothing & Footwear Manufacturing	20,046	1,410	7.0%
Wood Product Manufacturing	21,864	14,280	65.3%
Pulp, Paper & Converted Paper Product Manufacturing	3,111	2,400	77.1%
Non-Metallic Mineral Product Manufacturing	14,820	8,190	55.3%
Primary Metal & Metal Product Manufacturing	14,964	12,420	83.0%
Fabricated Metal Product Manufacturing	57,216	17,430	30.5%
Transport Equipment Manufacturing	28,512	19,500	68.4%
Petroleum & Coal Product Manufacturing	1,494	1,215	81.3%
Basic Chemical & Chemical Product Manufacturing	8,853	7,335	82.9%
Warehousing & Storage Services	3,813	2,805	73.6%
Basic Material Wholesaling	29,673	13,965	47.1%

Note: That is, those businesses with more than 20 employees with the exception of hazardous industry (10 or more employees).

Source: ABS (2007)

It has been assumed that the incidence of employment classified as noxious and hazardous remains constant throughout the projection period (2010-2031).

3.5.2 Refined Gross Industrial Land Demand

The proportions outlined in Table 3.12 above have been applied to refine preliminary gross industrial land demand estimates, to include provision for noxious and hazardous industry activity.

Fitzroy Planning Area

By 2031, gross incremental industrial land demand within the Fitzroy planning area is projected to be 60.5 hectares, comprising:

- 3.0 hectares in Gracemere;
- 54.4 hectares in Stanwell Industrial Corridor; and
- 3.0 hectares in Fitzroy Rural.

Gross incremental land demand within Fitzroy planning area is anticipated to be highest for medium impact (22.6 hectares) and low impact industry (17.4 hectares).

Table 3.13 below summarises gross industrial land demand within the Fitzroy planning area between 2010 and 2031.

Table 3.13: Gross Industrial Land Demand, Fitzroy Planning Area, 2010-31

	Gross Industrial Land Demand						Gross Incremental Land Demand				
	2010	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
<u>Gracemere</u>											
Low impact Industry	4.3	4.4	4.5	4.7	4.9	5.2	0.0	0.1	0.3	0.6	0.9
Medium impact industry	6.4	6.4	6.6	6.9	7.2	7.5	0.0	0.2	0.5	0.8	1.1
High impact industry	1.0	1.0	1.0	1.1	1.2	1.4	0.0	0.0	0.1	0.2	0.4
Noxious & hazardous industry	2.2	2.2	2.3	2.4	2.6	2.8	0.0	0.1	0.2	0.4	0.6
Total	13.9	14.0	14.3	15.0	15.9	16.9	0.1	0.4	1.1	2.0	3.0
<u>Stanwell Industrial Corridor</u>											
Low impact Industry	8.3	8.8	10.4	14.3	18.8	24.0	0.5	2.1	6.0	10.5	15.7
Medium impact industry	12.2	12.9	15.5	20.4	26.1	32.6	0.7	3.3	8.2	13.9	20.4
High impact industry	1.9	2.0	2.6	4.3	6.4	9.0	0.1	0.7	2.4	4.5	7.1
Noxious & hazardous industry	4.1	4.4	5.6	8.2	11.5	15.4	0.3	1.5	4.1	7.4	11.3
Total	26.6	28.1	34.1	47.2	62.8	81.0	1.5	7.6	20.7	36.3	54.4
<u>Fitzroy Rural</u>											
Low impact Industry	0.5	0.5	0.6	0.8	1.1	1.4	0.0	0.1	0.3	0.6	0.9
Medium impact industry	0.8	0.8	0.9	1.2	1.5	1.9	0.0	0.2	0.5	0.8	1.1
High impact industry	0.1	0.1	0.2	0.2	0.4	0.5	0.0	0.0	0.1	0.2	0.4
Noxious & hazardous industry	0.3	0.3	0.3	0.5	0.7	0.9	0.0	0.1	0.2	0.4	0.6
Total	1.6	1.7	2.1	2.8	3.7	4.7	0.1	0.4	1.1	2.0	3.0
<u>Fitzroy Planning Area</u>											
Low impact Industry	13.1	13.7	15.5	19.8	24.8	30.6	0.5	2.3	6.6	11.7	17.4
Medium impact industry	19.4	20.1	23.1	28.5	34.8	42.0	0.7	3.7	9.1	15.5	22.6
High impact industry	3.0	3.1	3.8	5.6	8.0	10.9	0.1	0.8	2.6	5.0	7.9
Noxious & hazardous industry	6.6	6.9	8.2	11.1	14.7	19.1	0.3	1.6	4.6	8.2	12.5
Total	42.1	43.8	50.5	65.1	82.4	102.5	1.7	8.4	23.0	40.3	60.5

Note: Gross incremental demand is on 2010 levels.
Source: Economic Associates estimates

Livingstone Planning Area

By 2031, gross incremental industrial land demand within the Livingstone planning area is projected to be 38.4 hectares, comprising:

- 1.5 hectares in Kinka Beach and Surrounds;

- 15.4 hectares in Livingstone Rural Balance;
- 0.4 hectares in The Caves / Rockyview; and
- 21.1 hectares in Yeppoon and Surrounds.

Gross incremental land demand within Livingstone planning area is anticipated to be highest for low impact industry.

Table 3.14 below summarises gross industrial land demand within the Livingstone planning area between 2010 and 2031.

Table 3.14: Gross Industrial Land Demand, Livingstone Planning Area, 2010-31

	Gross Industrial Land Demand						Gross Incremental Land Demand				
	2010	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
<u>Emu Park & Surrounds</u>											
Low impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medium impact industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High impact industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious & hazardous industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<u>Kinka Beach & Surrounds</u>											
Low impact Industry	2.2	2.3	2.4	2.6	2.8	3.1	0.0	0.2	0.4	0.6	0.8
Medium impact industry	0.9	0.9	1.0	1.0	1.1	1.1	0.0	0.1	0.1	0.2	0.2
High impact industry	1.0	1.0	1.0	1.1	1.1	1.2	0.0	0.1	0.1	0.2	0.2
Noxious & hazardous industry	0.9	0.9	1.0	1.0	1.1	1.1	0.0	0.1	0.1	0.2	0.2
Total	5.0	5.1	5.4	5.8	6.1	6.5	0.1	0.4	0.8	1.2	1.5
<u>Livingstone Rural Balance</u>											
Low impact Industry	12.8	13.2	14.8	16.7	18.9	21.1	0.5	2.0	3.9	6.1	8.4
Medium impact industry	5.0	5.2	5.8	6.3	6.8	7.4	0.2	0.8	1.3	1.9	2.4
High impact industry	5.5	5.7	6.3	6.7	7.2	7.6	0.2	0.9	1.3	1.7	2.1
Noxious & hazardous industry	5.2	5.3	6.0	6.5	7.0	7.6	0.2	0.8	1.3	1.9	2.4
Total	28.3	29.4	32.8	36.2	39.9	43.7	1.1	4.4	7.8	11.6	15.4
<u>The Caves / Rockyview</u>											
Low impact Industry	0.8	0.9	0.9	0.9	1.0	1.0	0.0	0.0	0.1	0.2	0.2
Medium impact industry	0.3	0.3	0.3	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.1
High impact industry	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.1
Noxious & hazardous industry	0.3	0.3	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.1
Total	1.9	1.9	2.0	2.1	2.2	2.2	0.0	0.1	0.2	0.3	0.4
<u>Yeppoon & Surrounds</u>											
Low impact Industry	17.5	18.1	20.2	22.9	25.9	29.0	0.7	2.7	5.4	8.4	11.5
Medium impact industry	6.8	7.1	7.9	8.6	9.4	10.2	0.3	1.1	1.8	2.6	3.3
High impact industry	7.5	7.7	8.6	9.2	9.8	10.4	0.3	1.2	1.8	2.4	2.9
Noxious & hazardous industry	7.0	7.3	8.2	8.9	9.6	10.4	0.3	1.1	1.8	2.6	3.3
Total	38.8	40.3	44.9	49.6	54.7	59.9	1.5	6.1	10.8	15.9	21.1
<u>Livingstone Planning Area</u>											
Low impact Industry	33.3	34.5	38.3	43.1	48.6	54.3	1.2	5.0	9.8	15.3	21.0
Medium impact industry	13.0	13.5	14.9	16.2	17.7	19.1	0.5	1.9	3.3	4.7	6.1
High impact industry	14.2	14.8	16.4	17.4	18.5	19.5	0.5	2.1	3.2	4.3	5.3
Noxious & hazardous industry	13.4	13.9	15.5	16.8	18.2	19.5	0.5	2.0	3.3	4.7	6.1
Total	74.0	76.7	85.1	93.5	102.9	112.4	2.7	11.1	19.6	29.0	38.4

Note: Gross incremental demand is on 2010 levels.
Source: Economic Associates estimates

Mount Morgan Planning Area

By 2031, gross incremental industrial land demand within the Mount Morgan planning area is projected to be 1.0 hectares, comprising:

- 0.9 hectares in Mount Morgan Township; and
- 0.1 hectares in Mount Morgan Rural.

Table 3.15 below summarises gross industrial land demand within the Mount Morgan planning area between 2010 and 2031.

Table 3.15: Gross Industrial Land Demand, Mount Morgan Planning Area, 2010-31

	Gross Industrial Land Demand						Gross Incremental Land Demand				
	2010	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
<u>Mount Morgan Township</u>											
Low impact Industry	0.7	0.7	0.8	0.9	1.0	1.1	0.0	0.1	0.2	0.3	0.4
Medium impact industry	0.4	0.5	0.5	0.6	0.7	0.7	0.0	0.1	0.2	0.2	0.3
High impact industry	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Noxious & hazardous industry	0.2	0.2	0.3	0.3	0.3	0.4	0.0	0.0	0.1	0.1	0.1
Total	1.4	1.4	1.6	1.8	2.0	2.3	0.1	0.3	0.5	0.7	0.9
<u>Mount Morgan Rural</u>											
Low impact Industry	0.4	0.4	0.4	0.4	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Medium impact industry	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0
High impact industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious & hazardous industry	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Total	0.9	0.9	0.9	0.9	0.9	1.0	0.0	0.0	0.1	0.1	0.1
<u>Mount Morgan Planning Area</u>											
Low impact Industry	1.1	1.1	1.2	1.3	1.4	1.6	0.0	0.1	0.3	0.4	0.5
Medium impact industry	0.7	0.8	0.8	0.9	1.0	1.1	0.0	0.1	0.2	0.2	0.3
High impact industry	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Noxious & hazardous industry	0.4	0.4	0.4	0.4	0.5	0.5	0.0	0.0	0.1	0.1	0.2
Total	2.2	2.3	2.5	2.7	3.0	3.2	0.1	0.3	0.5	0.8	1.0

Note: Gross incremental demand is on 2010 levels.
Source: Economic Associates estimates

Rockhampton Planning Area

By 2031, gross incremental industrial land demand within the Rockhampton planning area is projected to be 80.5 hectares, comprising:

- 0.8 hectares in Airport;
- 0.8 hectares in the CBD;
- 2.0 hectares in North Rockhampton Commercial Corridor;
- 4.0 hectares in North Rockhampton Industrial;
- 0.8 hectares in North Rockhampton Residential;

- 58.3 hectares in Parkhurst – Kawana Industrial Corridor;
- 10.1 hectares in South Rockhampton Industrial;
- 0.8 hectares in South Rockhampton Balance;
- 2.0 hectares in South Rockhampton Commercial Corridor; and
- 0.8 hectares in South Rockhampton Residential.

Gross incremental land demand within Rockhampton planning area is anticipated to be highest for medium impact industry (38.8 hectares) and low impact industry (17.9 hectares).

Table 3.16 below summarises gross industrial land demand within the Rockhampton planning area between 2010 and 2031.

Table 3.16: Gross Industrial Land Demand, Rockhampton Planning Area, 2010-31

	Gross Industrial Land Demand						Gross Incremental Land Demand				
	2010	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
<u>Airport</u>											
Low impact Industry	3.7	3.7	3.8	3.8	3.9	3.9	0.0	0.1	0.1	0.2	0.2
Medium impact industry	4.8	4.9	5.0	5.1	5.1	5.2	0.0	0.2	0.2	0.3	0.4
High impact industry	0.9	0.9	0.9	0.9	1.0	1.0	0.0	0.0	0.1	0.1	0.1
Noxious & hazardous industry	1.3	1.4	1.4	1.4	1.4	1.5	0.0	0.1	0.1	0.1	0.1
Total	10.8	10.9	11.1	11.3	11.4	11.6	0.1	0.4	0.5	0.6	0.8
<u>CBD</u>											
Low impact Industry	17.0	17.0	17.1	17.1	17.1	17.2	0.0	0.1	0.1	0.2	0.2
Medium impact industry	22.2	22.2	22.3	22.4	22.5	22.6	0.0	0.2	0.2	0.3	0.4
High impact industry	4.0	4.0	4.1	4.1	4.1	4.1	0.0	0.0	0.1	0.1	0.1
Noxious & hazardous industry	6.2	6.2	6.2	6.2	6.3	6.3	0.0	0.1	0.1	0.1	0.1
Total	49.4	49.5	49.7	49.9	50.0	50.2	0.1	0.4	0.5	0.6	0.8
<u>North Rockhampton Balance</u>											
Low impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medium impact industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High impact industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious & hazardous industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<u>North Rockhampton Commercial Corridor</u>											
Low impact Industry	8.6	8.6	8.9	8.9	8.9	9.0	0.1	0.3	0.3	0.4	0.4
Medium impact industry	11.2	11.3	11.6	11.8	11.9	12.1	0.1	0.4	0.6	0.8	1.0
High impact industry	2.0	2.1	2.1	2.2	2.2	2.3	0.0	0.1	0.1	0.2	0.3
Noxious & hazardous industry	3.1	3.1	3.2	3.3	3.4	3.4	0.0	0.1	0.2	0.3	0.3
Total	24.9	25.1	25.8	26.1	26.5	26.9	0.3	0.9	1.3	1.6	2.0
<u>North Rockhampton Industrial</u>											
Low impact Industry	16.6	16.8	17.2	17.3	17.4	17.5	0.2	0.6	0.7	0.8	0.9
Medium impact industry	21.7	21.9	22.5	22.9	23.2	23.6	0.2	0.8	1.2	1.5	1.9
High impact industry	4.0	4.0	4.1	4.2	4.4	4.5	0.0	0.2	0.3	0.4	0.5
Noxious & hazardous industry	6.0	6.1	6.3	6.4	6.5	6.7	0.1	0.3	0.4	0.5	0.7
Total	48.3	48.8	50.2	50.8	51.5	52.3	0.5	1.9	2.6	3.2	4.0
<u>North Rockhampton Residential</u>											
Low impact Industry	12.9	12.9	13.0	13.0	13.1	13.1	0.0	0.1	0.1	0.2	0.2
Medium impact industry	16.9	16.9	17.0	17.1	17.2	17.2	0.0	0.2	0.2	0.3	0.4
High impact industry	3.1	3.1	3.1	3.1	3.1	3.2	0.0	0.0	0.1	0.1	0.1
Noxious & hazardous industry	4.7	4.7	4.7	4.8	4.8	4.8	0.0	0.1	0.1	0.1	0.1

	Gross Industrial Land Demand						Gross Incremental Land Demand				
	2010	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
Total	37.5	37.6	37.9	38.0	38.1	38.3	0.1	0.4	0.5	0.6	0.8
<u>Parkhurst-Kawana Industrial Corridor</u>											
Low impact Industry	74.3	76.8	82.9	84.3	85.6	87.3	2.5	8.6	10.0	11.3	13.0
Medium impact industry	97.1	100.4	108.9	114.0	119.3	125.2	3.4	11.8	16.9	22.2	28.1
High impact industry	17.7	18.4	20.3	21.9	23.6	25.5	0.7	2.6	4.2	5.9	7.8
Noxious & hazardous industry	26.9	28.0	31.1	32.8	34.5	36.4	1.1	4.1	5.8	7.6	9.5
Total	216.0	223.6	243.2	253.0	263.0	274.3	7.6	27.2	37.0	47.0	58.3
<u>South Rockhampton Industrial</u>											
Low impact Industry	26.8	27.2	28.2	28.5	28.7	29.0	0.4	1.5	1.7	2.0	2.2
Medium impact industry	35.0	35.5	37.0	37.9	38.8	39.8	0.6	2.0	2.9	3.8	4.8
High impact industry	6.4	6.5	6.8	7.1	7.4	7.7	0.1	0.5	0.7	1.0	1.3
Noxious & hazardous industry	9.7	9.9	10.4	10.7	11.0	11.3	0.2	0.7	1.0	1.3	1.6
Total	77.8	79.1	82.5	84.1	85.9	87.8	1.3	4.7	6.4	8.1	10.1
<u>South Rockhampton Balance</u>											
Low impact Industry	3.1	3.2	3.3	3.3	3.3	3.3	0.0	0.1	0.1	0.2	0.2
Medium impact industry	4.1	4.1	4.3	4.3	4.4	4.5	0.0	0.2	0.2	0.3	0.4
High impact industry	0.7	0.8	0.8	0.8	0.8	0.9	0.0	0.0	0.1	0.1	0.1
Noxious & hazardous industry	1.1	1.2	1.2	1.2	1.2	1.3	0.0	0.1	0.1	0.1	0.1
Total	9.1	9.2	9.5	9.6	9.8	9.9	0.1	0.4	0.5	0.6	0.8
<u>South Rockhampton Commercial Corridor</u>											
Low impact Industry	13.0	13.0	13.2	13.3	13.3	13.4	0.1	0.3	0.3	0.4	0.4
Medium impact industry	16.9	17.0	17.3	17.5	17.7	17.9	0.1	0.4	0.6	0.8	1.0
High impact industry	3.1	3.1	3.2	3.2	3.3	3.3	0.0	0.1	0.1	0.2	0.3
Noxious & hazardous industry	4.7	4.7	4.8	4.9	5.0	5.0	0.0	0.1	0.2	0.3	0.3
Total	37.7	37.9	38.6	38.9	39.3	39.7	0.3	0.9	1.3	1.6	2.0
<u>South Rockhampton Residential</u>											
Low impact Industry	1.6	1.7	1.8	1.8	1.8	1.8	0.0	0.1	0.1	0.2	0.2
Medium impact industry	2.1	2.2	2.3	2.4	2.4	2.5	0.0	0.2	0.2	0.3	0.4
High impact industry	0.4	0.4	0.4	0.4	0.5	0.5	0.0	0.0	0.1	0.1	0.1
Noxious & hazardous industry	0.6	0.6	0.7	0.7	0.7	0.7	0.0	0.1	0.1	0.1	0.1
Total	4.8	4.9	5.1	5.3	5.4	5.6	0.1	0.4	0.5	0.6	0.8
<u>Rockhampton Planning Area</u>											
Low impact Industry	177.5	181.0	189.4	191.3	193.1	195.4	3.5	11.8	13.8	15.6	17.9
Medium impact industry	231.9	236.6	248.3	255.3	262.5	270.7	4.6	16.3	23.3	30.6	38.8
High impact industry	42.2	43.2	45.8	48.1	50.4	52.9	1.0	3.6	5.9	8.2	10.7
Noxious & hazardous industry	64.4	65.9	70.1	72.4	74.8	77.4	1.5	5.7	8.0	10.4	13.0
Total	516.1	526.6	553.6	567.1	580.9	596.5	10.5	37.5	51.0	64.8	80.5

Note: Gross incremental demand is on 2010 levels.
Source: Economic Associates estimates

4 DEMAND FOR INTERMODAL TRANSPORT FACILITY

4.1 Transport & Logistics Industry Sectors

The key two digit ANZSIC industry sectors contained within the transport and logistics sector are:

- Road transport;
- Rail transport; and
- Warehousing and storage services.

4.2 Identification of Major Supplier and Customer Sectors

This section summarises the major supplier and customer sectors of the transport and logistics sector.

The analysis of inter-industry transactions is based on the 2004-05 Australian Input-Output tables. While these input-output tables are over five years old, it is considered unlikely that there has been a significant change in the structural inter-dependence of the key industries within the Rockhampton regional economy⁵.

Table 4.1 below summarises the concordance between the key industries identified (at the 2006 ANZSIC two digit level) and the component sub-sectors as identified in the 2004-05 Australian input-output tables (at the 1993 ANZSIC three digit level).

Table 4.1: Key Industry Sectors in Rockhampton Regional Council and Relevant Industry Sub-Sectors from Input-Output Tables

Key Industry Sector	Relevant Industries from Input Output Tables
Road transport	<ul style="list-style-type: none"> • Road transport
Rail transport	<ul style="list-style-type: none"> • Rail transport
Warehousing & storage services	<ul style="list-style-type: none"> • Services to transport; storage

For each industry sector identified, the major supplier and customer industry sectors were identified based on their relative significance in terms of either sales to or purchases from the subject industry sector. Supplier and customer industry sectors were grouped into the following broad categories:

- Primary industries;
- Secondary industries;
- Tertiary industries;

⁵ While there may have been some changes to industrial processes over the last five years, it is likely that the inputs to those processes have not changed significantly.

- Quaternary industries; and
- Quinary industries.

The above categories provide a hierarchy of industries from the supply of commodities (primary industry) to the provision of higher order services, such as health and community services and cultural and recreational services (quinary industry).

Table 4.2 below provides a summary of the classification of industry sectors (at the 1993 ANZSIC three digit level) into broad industry categories.

Table 4.2: Classification of industry sectors into industry categories

Primary Industry	Secondary Industry	Tertiary industry	Quaternary Industry	Quinary Industry
<ul style="list-style-type: none"> • Sheep • Grains • Beef cattle • Dairy cattle • Pigs • Poultry • Other agriculture • Services to agriculture, hunting and trapping • Forestry and logging • Commercial fishing • Coal mining • Oil & gas mining • Iron ore mining • Non-ferrous metal ores mining • Other mining • Services to mining 	<ul style="list-style-type: none"> • Wine, spirits and tobacco products mfg • Meat and meat products mfg • Dairy products mfg • Fruit and vegetable products mfg • Oils and fats mfg • Flour mill products and cereal foods mfg • Bakery products mfg • Confectionery mfg • Other food products mfg • Soft drinks, cordials and syrups mfg • Beer and malt mfg • Textile fibres, yarns and woven fabrics mfg • Textile products mfg • Knitting mill products mfg • Clothing mfg • Footwear mfg • Leather and leather products mfg • Sawmill products mfg • Other wood products mfg • Pulp, paper and paperboard mfg • Paper containers and products mfg • Printing and services to printing mfg • Publishing, recorded media mfg • Petroleum and coal products mfg • Basic chemicals mfg • Paint mfg • Medicinal and pharmaceutical products, pesticides mfg • Soap and detergents mfg • Cosmetics and toiletry preparations mfg • Other chemical products mfg • Rubber products mfg • Plastic products mfg • Glass and glass products mfg • Ceramic products mfg • Cement, lime and concrete slurry mfg • Plaster and other concrete products 	<ul style="list-style-type: none"> • Wholesale mechanical repairs • Other wholesale repairs • Retail mechanical repairs • Other retail repairs • Wholesale trade • Retail trade • Accommodation, cafes and restaurants • Road transport • Rail, pipeline and other transport • Water transport • Air and space transport • Services to transport, storage 	<ul style="list-style-type: none"> • Communication services • Banking • Non-bank finance • Insurance • Services to finance, investment and insurance • Ownership of dwellings • Other property services • Scientific research, technical and computer services • Legal, accounting, marketing and business management services • Other business services • Government administration • Defence • Education 	<ul style="list-style-type: none"> • Health services • Community services • Motion picture, radio and television services • Libraries, museums and the arts • Sport, gambling and recreational services • Personal services • Other services

Primary Industry	Secondary Industry	Tertiary industry	Quaternary Industry	Quinary Industry
	<ul style="list-style-type: none"> mfg • Other non-metallic mineral products mfg • Iron and steel mfg • Basic non-ferrous metal and products mfg • Structural metal products mfg • Sheet metal products mfg • Fabricated metal products mfg • Motor vehicles and parts, other transport equipment mfg • Ships and boats mfg • Railway equipment mfg • Aircraft mfg • Photographic and scientific equipment mfg • Electronic equipment mfg • Household appliances mfg • Other electrical equipment mfg • Agricultural, mining, etc. machinery mfg • Other machinery and equipment mfg • Prefabricated buildings mfg • Furniture mfg • Other mfg • Electricity supply • Gas supply • Water supply, sewerage and drainage services • Residential building • Other construction • Construction trade services 			

4.3 Input - Output Tables

4.3.1 Road Transport

The most significant inter-industry transactions pertaining to the road transport sector on the supply side were petroleum and coal products manufacturing (10%), retail mechanical repairs (8%) and road transport (5%). The most significant customer sectors were road transport (8%), wholesale trade (6%) and meat and meat products manufacturing (5%) (refer to Table 4.3).

Table 4.3: Inter Industry Transactions, Road Transport

Inputs			Outputs					
Industry Name	\$M	%	Total Inputs	\$M	%	Inter industry uses	\$M	%
Primary Industry			Primary Industry	13	0%	Primary Industry		
Forestry and logging	8	0%	Secondary Industry	6,156	18%	Grains	223	1%
Oil and gas	4	0%	Tertiary Industry	6,539	19%	Beef cattle	216	1%
Other agriculture	1	0%	Quaternary Industry	6,413	18%	Other agriculture	198	1%
Other	0	0%	Quinary Industry	90	0%	Other	872	4%
Total	13	0%	Wages	7,972	23%	Total	1,509	8%
			Total	27,182	78%			
Secondary Industry			Industry Gross VA			Secondary Industry		
Petroleum and coal products	3,574	10%	Gross operating surplus	5,449	16%	Meat and meat products	982	5%
Motor vehicles and parts; other transport equipment	1,350	4%	Net taxes	1,342	4%	Construction trade services	724	4%
Rubber products	304	1%	Total	6,791	19%	Residential building construction	675	3%
Water supply; sewerage and drainage services	183	1%			Other construction	580	3%	
Other electrical equipment	96	0%			Iron and steel	431	2%	
Plastic products	89	0%			Other food products	409	2%	
Electricity supply	67	0%			Other	5,389	28%	
Electronic equipment	48	0%			Total	9,188	47%	
Textile products	45	0%			Tertiary Industry			
Other	399	1%			Road transport	1,611	8%	
Total	6,156	18%			Wholesale trade	1,260	6%	
Tertiary Industry					Accommodation, cafes and restaurants	509	3%	
Retail mechanical repairs	2,930	8%			Other	1,282	7%	
Road transport	1,611	5%			Total	4,662	24%	
Wholesale trade	741	2%			Quaternary Industry			
Services to transport; storage	403	1%			Government administration	554	3%	
Other	853	2%			Communication services	500	3%	
Total	6,539	19%			Other	1,099	6%	
Quaternary Industry					Total	2,152	11%	
Legal, accounting, marketing and business management services	1,970	6%			Quinary Industry			
Other property services	1,219	3%			Sport, gambling and recreational services	233	1%	
Communication services	1,054	3%			Health services	189	1%	
Scientific research, technical and computer services	885	3%			Other	403	2%	
Other	1,285	4%			Total	825	4%	
Total	6,413	18%			Total inter-industry uses	18,337	94%	
Quinary Industry					Total Consumption			
Motion picture, radio and television services	35	0%	Total Supply		Inter-industry Uses	18,337	94%	
Other services	27	0%	Inputs	27,182	78%	Exports	103	1%
Libraries, museums and the arts	24	0%	Industry Gross VA	6,791	19%	Final consumption expenditure	867	4%
Sport, gambling and recreational services	2	0%	Imports	949	3%	Capital formation	130	1%
Other	2	0%	Total	34,922	100%	Change in inventories	-21	0%
Total	90	0%			Total	19,415	100%	

Source: ABS (2008) Input Output Tables, 2004-05

4.3.2 Rail Transport

The most significant inter-industry transactions pertaining to the rail transport sector on the supply side were other property services (9%), railway equipment manufacturing (9%) and construction trade services (5%). The most significant customer sectors were coal (12%), electricity supply (10%) and basic non-ferrous metal and products manufacturing (5%) (refer to Table 4.4).

Table 4.4: Inter Industry Transactions, Rail Transport

Inputs			Outputs		
Industry Name	\$M	%	Total Inputs	\$M	%
Primary Industry			Primary Industry	27	0%
Forestry and logging	20	0%	Secondary Industry	3,259	27%
Oil and gas	6	0%	Tertiary Industry	605	5%
Other agriculture	1	0%	Quaternary Industry	1,832	15%
Other	0	0%	Quinary Industry	21	0%
Total	27	0%	Wages	3,326	28%
			Total	9,070	75%
Secondary Industry			Industry Gross VA		
Railway equipment	1,035	9%	Gross operating surplus	2,263	19%
Construction trade services	627	5%	Net taxes	144	1%
Structural metal products	456	4%	Total	2,407	20%
Petroleum and coal products	333	3%			
Electricity supply	243	2%			
Publishing; recorded media and publishing	62	1%			
Iron and steel	59	0%			
Agricultural, mining and construction machinery, lifting and material handling equipment	45	0%			
Electronic equipment	43	0%			
Other	355	3%			
Total	3,259	27%			
Tertiary Industry					
Wholesale trade	145	1%			
Road transport	112	1%			
Other retail repairs	105	1%			
Retail mechanical repairs	74	1%			
Other	169	1%			
Total	605	5%			
Quaternary Industry					
Other property services	1,124	9%			
Other business services	160	1%			
Banking	99	1%			
Scientific research, technical and computer services	92	1%			
Other	356	3%			
Total	1,832	15%			
Quinary Industry					
Libraries, museums and the arts	11	0%			
Personal services	5	0%			
Health services	4	0%			
Motion picture, radio and television services	1	0%			
Other	1	0%			
Total	21	0%			
			Total Supply		
			Inputs	9,070	75%
			Industry Gross VA	2,407	20%
			Imports	558	5%
			Total	12,034	100%
			Inter industry uses		
			Primary Industry		
			Coal	804	12%
			Oil and gas	234	4%
			Iron ores	58	1%
			Other	122	2%
			Total	1,218	19%
			Secondary Industry		
			Electricity supply	651	10%
			Basic non-ferrous metal and products	305	5%
			Iron and steel	288	4%
			Plastic products	133	2%
			Cement, lime and concrete slurry	119	2%
			Other construction	66	1%
			Other	720	11%
			Total	2,281	35%
			Tertiary Industry		
			Wholesale trade	91	1%
			Services to transport; storage	67	1%
			Accommodation, cafes and restaurants	55	1%
			Other	90	1%
			Total	303	5%
			Quaternary Industry		
			Communication services	153	2%
			Legal, accounting, marketing and business management services	130	2%
			Other	313	5%
			Total	595	9%
			Quinary Industry		
			Health services	19	0%
			Community services	14	0%
			Other	25	0%
			Total	58	1%
			Total inter-industry uses	4,456	68%
			Total Consumption		
			Inter-industry Uses	4,456	68%
			Exports	436	7%
			Final consumption expenditure	1,372	21%
			Capital formation	182	3%
			Change in inventories	66	1%
			Total	6,511	100%

Source: ABS (2008) Input Output Tables, 2004-05

4.3.3 Services to Transport; Storage

The most significant inter-industry transactions pertaining to the services to transport; storage sector were other property services (8%), scientific research, technical and computer services (7%) and other business services (7%). The most significant customer sectors were wholesale trade (22%), services to transport, storage (9%) and other construction (4%) (refer to Table 4.5).

Table 4.5: Inter Industry Transactions, Services to Transport, Storage

Inputs			Outputs		
Industry Name	\$M	%	Industry Name	\$M	%
Primary Industry			Inter industry uses		
Oil and gas	17	0%	Primary Industry		
Other agriculture	14	0%	Coal	247	1%
Forestry and logging	4	0%	Grains	125	0%
Other	0	0%	Oil and gas	80	0%
Total	35	0%	Other	281	1%
			Total	733	2%
Secondary Industry			Secondary Industry		
Electricity supply	665	2%	Other construction	1372	4%
Aircraft	588	2%	Paper containers and products	394	1%
Petroleum and coal products	437	1%	Other food products	355	1%
Electronic equipment	302	1%	Basic chemicals	279	1%
Construction trade services	214	1%	Medicinal and pharmaceutical products, pesticides	235	1%
Motor vehicles and parts; other transport equipment	200	1%	Motor vehicles and parts; other transport equipment	176	1%
Water supply; sewerage and drainage services	180	0%	Other	3,123	9%
Other wood products	136	0%	Total	5,934	18%
Other machinery and equipment	105	0%			
Other	716	2%	Tertiary Industry		
Total	3,543	10%	Wholesale trade	7,352	22%
Tertiary Industry			Services to transport; storage	3,204	9%
Retail mechanical repairs	585	2%	Air and space transport	1,176	3%
Accommodation, cafes and restaurants	482	1%	Other	2,143	6%
Road transport	416	1%	Total	13,876	41%
Wholesale trade	398	1%			
Other	3,950	11%	Quaternary Industry		
Total	5,832	16%	Other business services	1,180	3%
Quaternary Industry			Government administration	1,108	3%
Other property services	3,055	8%	Other	2,485	7%
Scientific research, technical and computer services	2,515	7%	Total	4,773	14%
Other business services	2,447	7%			
Communication services	1,498	4%	Quinary Industry		
Other	2,536	7%	Health services	78	0%
Total	12,050	33%	Motion picture, radio and television services	58	0%
Quinary Industry			Other	165	0%
Health services	91	0%	Total	301	1%
Libraries, museums and the arts	38	0%	Total inter-industry uses	25,616	76%
Other services	31	0%			
Motion picture, radio and television services	12	0%	Total Consumption		
Other	8	0%	Inter-industry Uses	25,616	76%
Total	179	0%	Exports	160	0%
			Final consumption expenditure	6,851	20%
Total Inputs			Capital formation	1,407	4%
Primary Industry	35	0%	Change in inventories	-201	-1%
Secondary Industry	3,543	10%	Total	33,833	100%
Tertiary Industry	5,832	16%			
Quaternary Industry	12,050	33%			
Quinary Industry	179	0%			
Wages	6,687	18%			
Total	28,326	77%			
Industry Gross VA					
Gross operating surplus	7,478	20%			
Net taxes	904	2%			
Total	8,382	23%			
Total Supply					
Inputs	28,326	77%			
Industry Gross VA	8,382	23%			
Imports	230	1%			
Total	36,938	100%			

Source: ABS (2008) Input Output Tables, 2004-05

4.3.4 Summary of Results

The input-output analysis identified that the key industry inputs for the transport and logistics sector were:

- Other property services;
- Petroleum and coal products manufacturing;
- Legal, accounting, marketing and business management services;
- Scientific research, technical and computer services;
- Other business services;
- Retail mechanical repairs;
- Road transport;
- Communication services;
- Wholesale trade;
- Services to transport, storage.

The key industry outputs from the transport and logistics sector were:

- Wholesale trade;
- Other construction;
- Communication services;
- Services to transport, storage;
- Iron and steel manufacturing;
- Retail trade;
- Other business services;
- Legal, accounting, marketing and business management services;
- Other food product manufacturing; and
- Residential building construction.

Five of the ten inputs and four of the ten outputs in the above list are classified as industrial sectors, with the remaining sectors providing business related services to industry.

4.4 Industrial Land Demand - Transport, Logistics & Related Sectors

Based on the above analysis of inter-industry transactions, the industrial sectors which directly and indirectly rely on transport and logistics uses are:

- Road transport;
- Rail transport;
- Warehousing and storage services;

- Petroleum and coal product manufacturing;
- Motor vehicle and motor vehicle parts retailing;
- Basic material wholesaling;
- Machinery and equipment wholesaling;
- Motor vehicle and motor vehicle parts wholesaling;
- Grocery, liquor and tobacco product wholesaling;
- Other goods wholesaling; and
- Primary metal and metal product manufacturing.

From the analysis conducted above in Chapter 3, gross incremental industrial land demand is highest within the following industrial areas:

- Parkhurst-Kawana Industrial Corridor (demand for an additional 58.3 hectares by 2031);
- Stanwell Industrial Corridor (demand for an additional 54.4 hectares by 2031); and
- Yeppoon and Surrounds (demand for an additional 21.1 hectares by 2031).

By 2031, gross incremental land demand within transport and logistics and related sectors is projected to be:

- 32.0 hectares in the Parkhurst-Kawana Industrial Corridor;
- 30.0 hectares in the Stanwell Industrial Corridor; and
- 6.3 hectares in Yeppoon and Surrounds.

While Yeppoon and Surrounds is the only area projected to record growth in the incidence of gross incremental land demand within transport and logistics and related sectors, the proportion of total land demand within these sectors is projected to be significantly higher in Parkhurst-Kawana Industrial Corridor and the Stanwell Industrial Corridor.

Table 4.6: Gross Incremental Land Demand, Transport, Logistics & Related Sectors, 2011-2031

	2011	2016	2021	2026	2031
Gross Incremental Land Demand - Transport & Logistics & Related Sectors					
Parkhurst-Kawana Industrial Corridor	4.4	15.3	20.5	25.9	32.0
Stanwell Industrial Corridor	0.9	4.6	11.8	20.2	30.0
Yeppoon & Surrounds	0.4	1.6	3.1	4.7	6.3
% of Total Gross Incremental Land Demand - Transport & Logistics & Related Sectors					
Parkhurst-Kawana Industrial Corridor	57.4%	56.1%	55.5%	55.1%	54.9%
Stanwell Industrial Corridor	60.1%	61.3%	57.0%	55.8%	55.1%
Yeppoon & Surrounds	27.0%	27.0%	28.6%	29.4%	30.0%

Source: Economic Associates estimates

4.5 Summary

The analysis above highlights that the areas within Rockhampton Regional Council with the highest demand for transport, logistics & related sectors are:

- Parkhurst-Kawana Industrial Corridor (32.0 hectares by 2031); and
- Stanwell Industrial Corridor (30.0 hectares by 2031).

Both areas are projected to have a similar level of land demand by 2031, suggesting that either represent ideal candidates for an intermodal facility within Rockhampton Regional Council.

The Parkhurst-Kawana Industrial Corridor is located to the north of Rockhampton CBD. However, it is anticipated that a significant amount of freight to an intermodal facility with Rockhampton would originate from the southern and central Bowen Basin, which are accessed via the Capricorn Highway, located south west of Rockhampton City.

If an intermodal facility was to be located within the northern half of Rockhampton, oversize loads would have to pass through Rockhampton CBD, which is not considered an optimal outcome.

The Stanwell Industrial Corridor, on the other hand, is located to the south of Rockhampton CBD and as such, does not face this same constraint. While the Stanwell Industrial Corridor has faced access issues given the need to cross the Central Railway, a major coal haulage route, via at-grade crossings, the State Government has recently committed \$10 million to the construction of a railway overpass to the Stanwell Industrial Corridor.



Appendix B

Gross Incremental Demand per Sub Area and Industry Zone



Table B-1 Rockhampton Gross Incremental Demand (ha)

Sub Area	2011	2016	2021	2026	2031
Airport					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	1	1	1
CBD					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	1	1	1
North Rockhampton Balance					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	0	0	0
North Rockhampton Commercial Corridor					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	1	1	1
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	1	1	2	2
North Rockhampton Industrial					
Low Impact Industry	0	1	1	1	1
Medium Impact Industry	0	1	1	2	2
High Impact Industry	0	0	0	0	1



Sub Area	2011	2016	2021	2026	2031
Noxious & Hazardous Industry	0	0	0	1	1
Total	1	2	3	3	4
North Rockhampton Residential					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	1	1	1
Parkhurst Kawana Industrial Area					
Low Impact Industry	3	9	10	11	13
Medium Impact Industry	3	12	17	22	28
High Impact Industry	1	3	4	6	8
Noxious & Hazardous Industry	1	4	6	8	10
Total	8	27	37	47	58
South Rockhampton Industrial					
Low Impact Industry	0	2	2	2	2
Medium Impact Industry	1	2	3	4	5
High Impact Industry	0	1	1	1	1
Noxious & Hazardous Industry	0	1	1	1	2
Total	1	5	6	8	10
South Rockhampton Balance					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	1	1	1
South Rockhampton Commercial Corridor					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	1	1	1



Sub Area	2011	2016	2021	2026	2031
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	1	1	2	2
South Rockhampton Residential					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	1	1	1
Rockhampton Total					
Low Impact Industry	4	12	14	16	18
Medium Impact Industry	5	16	23	31	39
High Impact Industry	1	4	6	8	11
Noxious & Hazardous Industry	2	6	8	10	13
Total	11	38	51	65	81

Table B-2 Fitzroy Gross Incremental Demand (ha)

Sub Area	2011	2016	2021	2026	2031
Gracemere (includes Gracemere Township, Precincts A & B)					
Low Impact Industry	0	0	0	1	1
Medium Impact Industry	0	0	1	1	1
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	1
Total	0	0	1	2	3
Stanwell Industrial Corridor (includes Precincts C - J)					
Low Impact Industry	1	2	6	11	16
Medium Impact Industry	1	3	8	14	20
High Impact Industry	0	1	2	5	7
Noxious & Hazardous Industry	0	2	4	7	11



Sub Area	2011	2016	2021	2026	2031
Total	2	8	21	36	54
Fitzroy Rural (includes Special Industrial Zone)					
Low Impact Industry	0	0	0	1	1
Medium Impact Industry	0	0	1	1	1
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	1
Total	0	0	1	2	3
Fitzroy Total					
Low Impact Industry	1	2	7	12	17
Medium Impact Industry	1	4	9	16	23
High Impact Industry	0	1	3	5	8
Noxious & Hazardous Industry	0	2	5	8	13
Total	2	8	23	40	61

Table B-3 Livingstone Gross Incremental Demand (ha)

Sub Area	2011	2016	2021	2026	2031
Emu Park & Surrounds					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	0	0	0
Kinka Beach & Surrounds					
Low Impact Industry	0	0	0	1	1
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	1	1	2
Livingstone Rural Balance					



Sub Area	2011	2016	2021	2026	2031
Low Impact Industry	1	2	4	6	8
Medium Impact Industry	0	1	1	2	2
High Impact Industry	0	1	1	2	2
Noxious & Hazardous Industry	0	1	1	2	2
Total	1	4	8	12	15
The Caves / Rockyview					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	0	0	0
Yeppoon & Surrounds					
Low Impact Industry	1	3	5	8	12
Medium Impact Industry	0	1	2	3	3
High Impact Industry	0	1	2	2	3
Noxious & Hazardous Industry	0	1	2	3	3
Total	2	6	11	16	21
Livingstone Total					
Low Impact Industry	1	5	10	15	21
Medium Impact Industry	1	2	3	5	6
High Impact Industry	1	2	3	4	5
Noxious & Hazardous Industry	1	2	3	5	6
Total	3	11	20	29	38

Table B-4 Mount Morgan Gross Incremental Demand (ha)

Sub Area	2011	2016	2021	2026	2031
Mount Morgan Township					
Low Impact Industry	0	0	0	0	0



Sub Area	2011	2016	2021	2026	2031
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	1	1	1
Mount Morgan Rural					
Low Impact Industry	0	0	0	0	0
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	0	0	0
Mount Morgan Total					
Low Impact Industry	0	0	0	0	1
Medium Impact Industry	0	0	0	0	0
High Impact Industry	0	0	0	0	0
Noxious & Hazardous Industry	0	0	0	0	0
Total	0	0	1	1	1



Appendix C
Assessment of Industrial Areas



Rockhampton City Planning Area

There is currently a total supply of 873 hectares of industrial zoned land in the Rockhampton City Planning Area contained within the following industrial areas:

- ▶ Airport Special Use Area;
- ▶ Berserker Heights Residential Area;
- ▶ Central Business District Commercial Area;
- ▶ Norbank Estate Special Use Area;
- ▶ Park Avenue Industrial Area;
- ▶ Parkhurst Industrial Area;
- ▶ South Rockhampton Highway Commercial Area;
- ▶ South Rockhampton Low Impact Industrial Area;
- ▶ Splitters Creek Residential Area; and
- ▶ Transport Industrial Area.

There is an estimated 266 ha of vacant land, of which 171 hectares is considered developable. Development opportunities are discussed further in the following industrial area assessments.

It is important to note that as the Rockhampton City Plan classifies land into planning areas rather than zones, in terms of the industrial land audit, the following rules have been applied:

- ▶ Where a planning area contains existing industrial uses and it is the intent of the planning area to expand these existing industrial uses or develop new industrial uses, these planning areas have been included in the audit (as identified above).
- ▶ Where a planning area contains existing industrial uses, but it is not the intent of the planning area to expand these existing industrial uses or develop new industrial uses, these planning areas have not been included in the audit.

Airport Special Use Area

The Airport Special Use Area is located to the west of the Rockhampton city centre and includes the Rockhampton Airport and significant cultural assets including the Rockhampton Botanic Gardens, Murray and Yeppen Yeppen Lagoons and Saint Aubin's Historic Village. The Area currently comprises a mixed use nature of residential, industrial, commercial and recreational uses, plus some land used for grazing purposes.

Industrial uses within the Area are located to the east of the Rockhampton Airport on Canoona and Lion Creek Roads. There were six industrial businesses identified including three road transport businesses and one each of non-metallic mineral product manufacturing, construction services and other goods wholesaling businesses.

The Area is relatively flat and the majority of land is severely flood prone. In terms of access, there are no heavy vehicle access routes to the area, with existing access limited to through the residential suburbs of Rockhampton. The crossing of the Fitzroy



River floodplain may offer an opportunity for a more direct access to the Area connecting to the Capricorn Highway and Gracemere-Stanwell Industrial Precinct.

There was no vacant and developable industrial land identified within the Airport Special Use Area, however there is potential for transition of residential and commercial uses located adjacent to existing industrial uses along Canoona Road. This is consistent with the intent of the planning scheme which supports airport or defence related industrial uses if localised issues can be appropriately managed, including flooding, aircraft noise, heavy vehicle access routes and protection of the cultural assets.

The Rockhampton Airport is the major aviation hub for the Rockhampton Region and hosts a range of carriers. The Rockhampton Airport is one of the few regional airports with heavy lift air freight capacity, which at this stage is largely underutilised. Opportunity exists for this capacity to be promoted to improve utilisation of this significant freight asset.

Berserker Heights Residential Area

The Berserker Heights Residential Area is located in north Rockhampton, generally between Lakes Creek Road and Frenchville Road. The Area is primarily residential, with a range of associated community uses located throughout the Area.

Thozet Road sub precinct contains non-residential uses including some industrial uses and is located at the southern end of Thozet Road, at the junction of Lakes Creek Road. Three industrial businesses were identified in this precinct, comprising a non-metallic mineral products manufacturing business, an other goods wholesale business and a basic materials wholesale business. Other uses in the sub precinct include a service station, shops, sporting facilities and a nursery incorporating landscape supplies.

Land in the Thozet Road sub precinct is setback 10 metres from residential land to the north, 30 metres from Frenchmans Creek and is also in close proximity to Thozet Creek. Most of the sub precinct is subject to flooding to varying degrees. As a result, residential amenity, flooding and potential contamination of downstream environments, will need to be of consideration for any industrial use locating in the sub precinct.

There were three vacant allotments identified in the sub precinct, however expansion of industrial uses will only be supported if the current level of impact on surrounding residential uses is not increased. Medium impact and particularly service industry is desired to replace existing high impact industrial uses, so there is potential land supply for these sectors.

Commercial Business District Commercial Area

The Central Business District Commercial Area, commonly referred to as the CBD, is located in South Rockhampton adjacent to the Fitzroy River. The Area contains much of the region's business and administrative function and services, as well as entertainment, educational, cultural and retail services for the City. Due to the role of this Area as the CBD, there is a range of uses including commercial, residential, community, recreation and industrial.



Industrial uses in the Area are located in the Denison and Kent Street sub precinct of Precinct 3 – Mixed Use Precinct Central Business District City Frame. The Denison and Kent Street sub precinct is a historical industrial area, however due to competing commercial and retail uses of the CBD, now comprises a majority of non-industrial uses. Remaining industrial uses, accounting for 16.2% of businesses, comprise service industry and warehousing and storage activities. These uses are concentrated on Denison Street and Kent Street and are a continuation of industrial uses in the adjacent South Rockhampton Low Impact Industrial Area.

Within the Denison and Kent Street sub precinct, there were 0.40 hectares of vacant and developable land and 1.60 hectares of developable remnant housing identified. Any new industrial uses in this sub precinct will typically be low impact, service type uses and will need to support the role and function of the CBD.

Due to the mixed use of the sub precinct and wider CBD Area, off site impacts will be of concern for any industrial use, along with maintaining amenity and streetscape character commensurate with the CBD.

Norbank Estate Special Use Area

Norbank Estate Special Use Area is located at Lakes Creek, to the east of the Rockhampton city centre and on the northern side of the Fitzroy River. The Area is used for a variety of industrial and residential uses that have been permitted to coexist over a long period of time. The north western part of the Area is dominated by Lakes Creek Meatworks and associated cattle holding yards. There is a significant amount of existing remnant housing and vacant land between Rockhampton-Emu Park Road and the Fitzroy River.

Industrial uses within the Norbank Estate Special Use Area included three repair and maintenance businesses, two construction service businesses and one each of furniture and other, non-metallic mineral product and food product manufacturing (Lakes Creek Meatworks) businesses. Industrial land has been divided into two precincts as follows:

- ▶ Precinct 2 – Industrial Precinct - Norbank Estate Special Industry comprises the western portion of the Norbank Estate Special Use Area. Industrial uses consist of the Lakes Creek Meatworks and bitumen and concrete batching plants. The precinct also contains land adjacent to the Fitzroy River that is flood prone.
- ▶ Precinct 3 - Industrial Precinct - Norbank Estate River Related Industry comprises the south eastern and north western portions of the Norbank Estate Special Use Area with various lots having direct access to the Fitzroy River. Majority of the lots are between 1500 m² to 2000 m², however two larger lots total almost 10 hectares. The land is generally undulating, most is flood prone to some extent. The southern portion of the Precinct also has limited access to sewerage reticulation.

The Area has generally undulating land throughout, with steeper areas located adjoining the Berserker Ranges. A number of small waterways traverse the Area and some land adjacent to the Fitzroy River and Lakes Creek is flood prone. Mangroves are also present along the Fitzroy River foreshore. The area has high general scenic



amenity that is desired to be protected, being a tourist route. In terms of access, the Area is dissected by the Rockhampton – Emu Park Road and Rockhampton – Yeppoon Railway, both state controlled infrastructure, and so has means for heavy goods movements.

Within the Norbank Estate Special Use Area industrial precincts there were 1.79 hectares of vacant and developable land and 0.21 hectares of developable remnant housing identified. The area was mostly vacant land allotments (23 allotments) and remnant housing (seven houses). Development potential exists in river or maritime related uses able to capitalise on land with access to, and limited impacts on, the Fitzroy River. Industries that can use by products of existing high impact industries would also be particularly encouraged. Any new industrial development would need to consider potential impacts on the nearby residential precinct.

Park Avenue Industrial Area

The Park Avenue Industrial Area is a centrally located, largely developed industrial precinct located just north of the Rockhampton CBD and Fitzroy River. The Area is predominantly industrial, with some residences located along Glenmore Road.

It can be characterised as a mature service precinct serving predominantly the Rockhampton population. The most significant industrial sectors within Park Avenue Industrial Area were the service industry (41.0% of businesses) and warehousing and storage (20.5% of businesses) sectors. Significant sub-sectors within the area included repair and maintenance (26.9% of businesses), other goods wholesaling (11.5% of businesses) and construction services (10.3% of businesses).

The Area comprises a range of lot sizes, particularly ranging from 200 m² to 1000 m² and a number of land parcels of several hectares. It consists of predominantly flat land, however part is subject to flooding near the Fitzroy River. Residential development on Park Street is also directly adjacent to the Area.

The Area is conveniently located in close proximity to major arterial routes (Moores Creek Road) which provides high accessibility for heavy vehicles. The Area is also dissected by the North Coast Rail Line.

Within the Park Avenue Industrial Area there were 0.44 hectares of vacant and developable land and 0.76 hectares of developable remnant housing identified. As a means of addressing the surrounding sensitive land uses, the Park Avenue Industrial Area has been divided into two precincts as follows:

- ▶ Precinct 1 – Industrial Precinct - Park Avenue Low Impact Industry is the preferred location for low impact industry and surrounds a medium impact core (Precinct 2). The Precinct adjoins residential areas and topographically, the land is predominantly flat. Low impact industries that appropriately manage impacts on nearby residential areas are supported in the Area. Such opportunities include development of light industry in place of existing remnant housing and the transition of North Rockhampton Rail Depot land to light industry (due to recognised QR land consolidation).



- Precinct 2 - Industrial Precinct - Park Avenue Medium Impact Industry is the preferred location for medium impact industry and comprises the core of the Area. This Precinct comprises larger land parcels particularly between 1 – 4 hectares which are predominantly flat. Continued operation of the Rockhampton Regional Council Works Depot and Workshops is supported, along with new industrial uses.

The existing industrial use pattern does not necessarily reflect the planning intent for the Area (ie some medium impact uses are operating in Precinct 1), however expansion of existing uses or any new industrial uses, will need to demonstrate compliance with this intent.

Parkhurst Industrial Area

The Parkhurst Industrial Area is a major regional industrial area located in North Rockhampton, bounded by the Bruce Highway (Yaamba Road) to the east and dissected by the North Coast Rail Line. The Area is a mature industrial area and is dominated by industrial related activities, with a scattering of dwelling houses.

The Parkhurst Industrial Area has an estimated 355 businesses. The most significant sub-sectors were other goods wholesaling (8.7% of businesses), construction services (6.2% of businesses) and repair and maintenance (5.9% of businesses). Significant users include QMag and Cement Australia, who operate in the northern portion of the Area. Queensland Rail also has a significant land holding abutting the railway line, of which a significant portion is currently vacant.

The Area includes a significant range of lot sizes from less than 1000m² to several hectares. Topographically, the Area is predominantly a flat upper terrace of the Fitzroy River floodplain, although some steep areas exist, in particular along the length of the northern boundary (William Palfrey Road). Limestone and Splitters Creek traverse the Area and associated localised flooding exists. Buffers and riparian corridors have been identified to prevent development occurring in these constrained areas. In addition, current noise and air issues for schools and residences along major roads including Farm Street and McLaughlin Street need to be addressed.

The Area is located within close proximity to major arterial routes and so has good higher order accessibility to the city centre and the airport. Some undeveloped and developed areas will require improved local access and services, in particular in the north. The crossing of the Fitzroy River floodplain may offer an opportunity for a more direct access to the Area as an alternative connection to the Airport and Capricorn Highway, rather than through the city and existing residential areas.

The Parkhurst Industrial Area has been divided in the following three precincts:

- Precinct 1 – Industrial Precinct - Parkhurst Low Impact Industry surrounds the medium and high impact Precincts of the Parkhurst Industrial area in order to provide a buffer to sensitive surrounding uses. Lot sizes are predominantly between 1000 m² and 4000 m², and to a lesser degree smaller group titled and larger undeveloped lots exist. In terms of land use, the Precinct is predominantly service industry, including older historical uses, particularly to the south. The



northern portion is largely undeveloped and requires tenure and/or Native Title³, significant vegetation and servicing issues to be resolved before industrial development will occur.

- Precinct 2 – Industrial Precinct - Medium Impact Industry comprises the core of the Area along with the High Impact Industry Precinct. Lot sizes are predominantly between 2000 m² and 6000 m². Existing industry within the Precinct is generally of a larger scale and higher impact than the surrounding Low Impact Industry Precinct.
- Precinct 3 – Industrial Precinct - High Impact Industry is located centrally within the Parkhurst Industrial Area and is adjacent to the North Coast Rail Line. Lot sizes are predominantly 1 – 4 hectares and some land parcels up to 20 hectares. QMag and Cement Australia currently utilise a majority of this Precinct.

Parkhurst Industrial Area is a key supply area for the Region, providing 163 ha of developable vacant land (151.84 hectares of vacant land 10.83 hectares of remnant housing). The Area has significant development potential, however vacant land presents a sequencing issue as 106 ha is currently considered restricted due to tenure, Native Title, drainage and infrastructure provision (access and stormwater) issues. These issues will need to be resolved prior to the land being available for development.

In terms of land use, due to the existing settlement pattern and proposed residential developments encompassing Parkhurst, residential encroachment is threatening the continued use of this area for higher impact uses, and the Area may see a transition to the lower impact uses. Any industrial uses that do decide to locate in this industrial area will need to consider offsite impacts in order to maintain residential amenity.

South Rockhampton Highway Commercial Area

The South Rockhampton Highway Commercial Area is a linear strip of uses along Gladstone Road / George Street, the main north-south arterial road on the southern side of Rockhampton, framing the eastern border of the CBD and South Rockhampton Low Impact Industrial Area. The prominence of the arterial route that dissects the Area means a variety of uses are currently established. These include light/service industry, showrooms/warehouses, motels, fast food outlets and shops, as well as some residential properties.

Lot sizes in the Area predominantly range from 1000 m² to 2000 m². Land within the Area is generally flat, with some properties in the southern end of Area being identified in 'flood fringe' risk areas of planning scheme. The Area is well established, with existing services and access off an arterial road.

Development opportunities include local light industry with direct point of sale to public, as consistent with the planning scheme. Such uses are however competing with commercial uses for available land in this area of high vehicle movements and will therefore not typically be industrial uses.

³ There is some significant land holdings in the northern portion of the Parkhurst Industrial Area owned by the State and are currently Unallocated State Land. This land is therefore subject to Native Title, which may need to be suppressed or extinguished before the subject land can be converted to freehold.



South Rockhampton Low Impact Industrial Area

South Rockhampton Low Impact Industrial Area is located immediately south of Rockhampton CBD and to the west of Fitzroy River. South Rockhampton Low Impact Industrial Area has an estimated 229 businesses and consists of predominantly low impact service industry, with remnant housing and some commercial activities dispersed throughout the Area. Being established for many years some uses are somewhat dilapidated. The most significant industrial sub-sectors within the industrial area were repair and maintenance (10.0% of businesses) and other goods wholesaling (9.6% of businesses). Paul's Dairy products processing plant is a significant user operating in the Area.

In terms of physical characteristics, lot sizes predominantly range from 500m² to 1000m². Land is largely flat and approximately half of the Area (in proximity to Fitzroy River) is subject to flooding. The Area is established, with existing services and appropriate road access. Many allotments are serviced by laneways, providing dual access. The Area is also adjacent to the Transport Industrial Area comprising Queensland Rail intermodal facility, freight centre, workshops and passenger terminal.

Located on the fringe of the CBD, the South Rockhampton Low Impact Industrial Area is surrounded and to some degree comprises, a mix of non-industrial uses including commercial, retail and residential. There are also heritage buildings of significance, in particular along Quay Street, which are to be protected.

Within the South Rockhampton Low Impact Industrial Area there were 1.45 hectares of vacant and developable land and 0.57 hectares of developable remnant housing identified. Development opportunities exist in the area mainly for light and service industry, particularly warehousing and storage and consumption based uses (i.e. uses providing direct public goods and services).

Being one of the oldest areas in Rockhampton, the planning scheme identifies much of the area as suitable for redevelopment, e.g. remnant housing and dilapidated industrial/commercial uses. Any new uses will need to consider heavy vehicle access (to avoid the CBD), flooding issues and potential contamination of downstream environments, along with appropriate built form and minimisation of off site impacts to maintain the character and amenity of the CBD and surrounding residential areas.

Splitters Creek Residential Area

Splitters Creek Residential Area is located in Kawana in North Rockhampton and is predominantly a residential area. Precinct 1 – Special Use Precinct – Alexander Street Mixed Use includes a cluster of low impact industrial uses adjoining and directly south of the Parkhurst Industrial Area.

The Precinct has developed to accommodate mainly light industrial uses and has an estimated nine industrial businesses. Industrial uses within the area included five warehousing and storage businesses, three service industry businesses and three large footprint and general industry businesses.

Lot sizes of industrial land within the Alexander Street Mixed Use Precinct are predominantly around 1000 m². The precinct is surrounded by residential development



and is dissected by the railway line. Relatively good arterial road access exists through Alexander Street and Richardson Road.

There were six allotments of vacant land identified within the area comprising 0.49 hectares of vacant and developable land and 0.16 hectares of developable remnant housing identified. In terms of development opportunities, there is fairly limited scope for expansion due to surrounding residential uses. Under the planning scheme, low impact industries such as bulk stores, vehicle depots or warehouses are particularly supported. Medium impact industry is supported only where over 50 metres from residences can be achieved.

Transport Industrial Area

The Transport Industrial Area is located directly south of the South Rockhampton Low Impact Industrial Area and the CBD. The Area is oddly shaped, as it is largely dictated by the Queensland Rail regional railway intermodal exchange facility including freight centre, workshops, passenger terminal and rail holding yards. It also includes some residential sized allotments, with uses including an existing bus depot.

Lot sizes range from a number of residential sized lots around 500 m² and a number of larger, more linear shaped lots around the rail depot. The majority of the land is flood affected to various degrees. Residential areas of Depot Hill surround the Area and also, items of cultural significance exist on land owned by Queensland Rail.

There was 0.05 hectares of developable remnant housing identified within the Transport Industrial Area. In terms of development opportunities, there is scope particularly for the expansion of transport related uses within the Area. Redevelopment of part of the QR site may be supported. The planning scheme supports additional passenger transport terminals and low impact industries within the Area. Medium impact industries are considered possibly suitable in the core of the Area and away from adjoining residential uses.

Livingstone Planning Area

There is currently a total supply of 80 hectares of industrial zoned land in the Livingstone Planning Area contained within the following industrial areas:

- ▶ Yeppoon;
- ▶ Barmaryee and Bondoola;
- ▶ Emu Park;
- ▶ Marlborough;
- ▶ Nerimbera; and
- ▶ Yamma.

Livingstone Planning Area has an estimated 8 ha of vacant land, of which 6 hectares is considered developable. Development opportunities are discussed further in the following industrial area assessments.



Yeppoon

Yeppoon is located approximately 41 kilometres to the north-east of Rockhampton and is currently the main service centre for the coastal areas of the Region. Industrial land is located along Tanby Road, at the entrance of the Yeppoon centre, and comprises predominantly of low impact and service industries. Some commercial uses have been identified throughout the area, such as retail, showrooms and food outlets. The area is also somewhat intermixed with residential uses and directly abuts residential development to the west and north.

The Yeppoon industrial area has an estimated 76 businesses. The most significant sectors within the area were the service industry (34.2% of businesses) and warehousing and storage (32.9% of businesses) sectors. The most significant sub-sectors within the Yeppoon industrial area were repair and maintenance (22.4% of businesses), other goods wholesaling (14.5% of businesses) and machinery and equipment wholesaling (11.8% of businesses).

There are currently a range of lot sizes suitable to a variety of light industry uses. The area is developed with services and road access off an arterial route. Topographically, land is typically flat and the eastern portion of the area is subject to drainage problems and storm tide hazard. Fig Tree Creek also traverses east west along the northern perimeter of the industrial area.

In the Yeppoon industrial area, there were 2.74 hectares of vacant and developable land and 0.41 hectares of developable remnant housing identified. Development opportunities of vacant land and the transition of commercial and residential uses for additional service type industrial uses exist. Any new development will need to consider the constraining factors including drainage and storm tide, along with appropriate built form and minimisation of off site impacts to maintain the amenity of the Yeppoon centre gateway.

Barmaryee and Bondoola

Barmaryee and Bondoola industrial areas are located along Rockhampton Yeppoon Road approximately 38 kilometres northeast of Rockhampton and five kilometres southwest of Yeppoon.

Barmaryee industrial area is recently developed, with established services. There is an estimated 28 businesses located along Jabiru Drive and Plover Drive. The most significant sectors within the industrial area were warehousing and storage (35.7% of businesses) and large footprint and general industry (28.6% of businesses). The pony club is located to the west of the industrial land and to the southeast, the Yeppoon Waste Management Facility.

Industrial land at Bondoola comprises a single land parcel (16 hectares) and is occupied by the Central Coast Sawmilling Co's sawmill. The sawmill is surrounded by rural uses and some dilapidated industrial uses including a wreckers. The site is well hidden from Rockhampton Yeppoon Road, from which access is obtained.

In the Barmaryee industrial area there was 1.59 hectares of vacant and developable land identified. Development opportunities exist for further low and medium impact



industrial uses in this estate. The land at Bondoola presents redevelopment and expansion opportunities, as the sawmill does not appear to be currently operating. The proposed 'western bypass' will significantly benefit development at this location if it goes ahead.

Emu Park

Emu Park is located approximately 45 kilometres northeast of Rockhampton and 20 kilometres south of Yeppoon. Industrial land is located to the east of the Emu Park township on Henry Street. The industrial area comprises a small cluster (6 lots) of industrial uses and newly developing lots adjacent to the Emu Park airstrip. Three construction services and one warehousing and storage business currently occupy three lots. The remaining three lots are vacant; however these are not considered developable land.

Lot sizes within the area are relatively small and suitable for light industry. The area is currently not serviced by reticulated services and road access is not considered suitable for heavy vehicle movements. There is no drainage issues affecting the existing land and steep land is located immediately west of the developed area.

The expansion of light industrial uses around the Emu Park industrial area is supported in principle in the planning scheme explanatory notes. Due to topographic shielding, the industrial area is well hidden from the Rockhampton Emu Park Road at the entrance to Emu Park.

Nerimbera

Industrial land at Nerimbera comprises a single large beef packaging industry use, namely Swift Australia Pty Ltd, located along Saint Christopher's Chapel Road.

Physical characteristics include a single serviced industrial lot. The lot has frontage to the Fitzroy River and is partially subject to flooding. Existing road access is from Rockhampton Emu Park Road and is suitable for heavy vehicle movements. The existing use, a beef packaging facility, is quite large and has significant associated employee traffic movements. Surrounding land uses are rural in nature, with the exception of Saint Christopher's Chapel which is located adjacent to the plant.

While there are no vacant industry zoned lots in the area, there is potential for expansion considering surrounding land uses are rural in nature. The area is approximately ten kilometres from the Rockhampton city centre.

Yaamba

A small industrial area is located in the township of Yaamba, located on the Bruce Highway, around 30 kilometres northwest of Rockhampton. The industrial area consists of a number of lots around 2 hectares. Local road access exists from the nearby Bruce Highway. The existing uses can be described as light industry, servicing demand mainly within the township. Development opportunities exist for new industrial uses on vacant allotments.



Marlborough

Industry within Marlborough is located within the Marlborough township, located just off the Bruce Highway, around 100 kilometres north of Rockhampton. The land is located on the eastern and western edges of the village centre and is surrounded by a mix of residential, rural, special use and open space land uses. Lot sizes are predominantly around 1000 m² to 2000 m². The existing built form includes a small number of light industrial uses to support the township and surrounding rural area.

Fitzroy Planning Area

Industrial land in the Fitzroy Planning Area is dominated by the Gracemere-Stanwell Industrial Precinct, comprising 2,395 hectares of the Planning Area's total 2,654 hectares of industrial land supply. Additional industrial land is also provided in the Gracemere township and significant single uses at Bajool, Bouldercombe and Mamor.

There is an estimated 1,401 hectares of vacant industrial land in the Fitzroy Planning Area, of which 945 hectares is considered developable. Development opportunities of existing industrial land are discussed further in the following section.

Gracemere-Stanwell Industrial Precinct

The Gracemere-Stanwell Industrial Precinct comprises 10 Precincts (A – J) stretching along the Capricorn Highway from Gracemere township to Stanwell Power Station. The Precinct also comprises an area of 'Village Balance' referred to as Precinct K which surrounds the business and industrial precincts. The Gracemere-Stanwell Industrial Precinct is the key supply area within Fitzroy Planning Area and the Rockhampton Region, offering 941 hectares (521.70 hectares of developable land and 419.01 hectares of developable remnant housing) of the total 945 hectares of developable vacant land.

The Precinct currently has an estimated 169 businesses, which are concentrated in Precincts A and B in close proximity to the Gracemere township. The most significant industrial sector within the Gracemere–Stanwell Industrial Precinct was the service industry sector, accounting for 6.5% of businesses. The significant user however is the Stanwell Power Station located at the western end of the Precinct.

Regional flooding and drainage issues are a significant problem for industrial development within a number of the precincts, along with the lack of provision of reticulated services and significant access issues related to the crossing of the railway line. An overpass is currently being investigated by Department of Transport and Main Roads to address the access issue.

As Precinct K surrounds Precincts A - J, rural residential areas of Gracemere, Kabra and Stanwell are inherently dispersed throughout and sometimes in between the business and industrial precincts. This presents a land use conflict to existing and future industrial uses due to the close proximity of sensitive uses and the requirement to travel through residential areas to access the highway.

Rural servicing industries, for example truck depots, are also prevalent in Precinct K particularly between Precincts B and C. Clearly this reflects a mismatch between the existing planning provisions and the ability to cater for this type of demand.



It should also be noted that Precincts E, G, H and I are owned by the Stanwell Corporation (at the time of writing this report). This presents a unique situation in relation to the development of this regionally significant corridor. It is likely that consultation with the Stanwell Corporation will be necessary to achieve desirable and progressive development of the corridor into the future.

General Industry Precinct A

General Industry Precinct A is located to the far northeast of the Gracemere-Stanwell Industrial Precinct. The majority of Precinct A is occupied by the Gracemere Saleyards. A council depot is also located adjacent to the saleyards.

The precinct consists of few lots of varying sizes ranging from less than a hectare, to some of several hectares and one of 73 hectares. There is existing direct access off Capricorn Highway to Precinct A and lots are currently serviced. Gracemere Creek and Padgole (Gracemere) Lagoon is located immediately north and east of the Precinct.

As a proportion of the Gracemere Saleyards site is currently unused, there is potential for development opportunities in Precinct A. As designated within the planning scheme, there is potential for agricultural and mining machinery manufacturing and repair, agricultural research, transport activities and exhibition and sports activities.

Business and Industry Precinct B

Business and Industry Precinct B adjoins existing industrial land of the Gracemere township and has been recently developed to support a variety of light industry uses. The predominant existing uses within the Precinct include transport uses and light industry. Remnant housing and home based transport operators also exist throughout the Precinct.

Lot sizes are predominantly 2000 m² to 4000 m² in the more recently developed areas, to a number of hectares in other areas. The Precinct has direct access off the Capricorn Highway, but poor access over the railway line. Land in Precinct B is currently serviced by reticulated services. Gracemere Creek also traverses the southeast corner of the Precinct.

Development opportunities exist in Precinct B, with an estimated 45 hectares of developable vacant land for additional light industry and associated business uses. The amenity of adjoining rural residential areas, along with access and minimising impacts on Gracemere Creek, will need to be considered for any new uses locating in this Precinct.

Business and Industry Precinct C

Business and Industry Precinct C is located east of Precinct B. Lot sizes are predominantly large, ranging between 2.9 hectares and 47.3 hectares. Existing land uses within Precinct C includes vacant land, rural residential uses and a substation is located in the southern portion on Boongary Road.

There is direct access available off the Capricorn Highway but poor access over the railway line. The State Government has recently completed a study to locate and design a new overpass over the railway to service the industrial precincts south of the



Highway. Provision of this overpass and connecting trunk road network will help unlock the potential of this area for development, providing that water and sewerage services are extended from Gracemere by Council.

As a result of lack of services this Precinct is currently largely undeveloped with a limited local road network and no serviced lots. A high voltage transmission line also traverses north south along the western perimeter of the Precinct. Drainage problems associated with the culverts under the railway line and highway are also an issue.

There is currently an estimated 20 hectares of vacant and developable land in Precinct C. Development opportunities exist for light industrial and associated business uses, however more land intensive than those in Precinct B. Rural residential areas in close proximity to the Precinct, will need to be a consideration for any new industrial development.

General Industry Precinct D

General Industry Precinct D adjoins Precincts C and J and is located south of the highway. The Precinct only comprises three lots ranging between 31.1 hectares and 53.7 hectares. Existing land uses include vacant land and rural residential uses.

The Precinct has direct access off the Capricorn Highway but poor access over the rail line, but as noted above, the State Government is currently investigating an option for improving access to this part of the industrial corridor. The Precinct has a limited local road network and no serviced lots. Precinct D is also subject to significant drainage problem issues. Land in the Precinct is generally flat, however hilly land is located to the west, providing a topographical buffer between the Precinct and nearby Kabra township.

There is an estimated 90 hectares of vacant and developable industrial land. Due to being surrounded by industrial precincts, in proximity to major transport routes and hilly land to the west, the preferred development for Precinct D is land intensive general industry. Potential general industry uses may include (as listed in planning scheme) agricultural and mining machinery manufacturing/repairing, refractory product making, freight depots and other transport related facilities, meat and fruit processing, scrap metal yards, recycling facilities and tanneries.

Special Industry Precinct E

Special Industry Precinct E is located to the east of the town of Stanwell and north of the Capricorn Highway. The Precinct comprises six larger lots between 22.7 and 52.1 hectares and three smaller lots between 2.3 and 3.9 hectares. Existing land uses include the former Neerkol Orphanage complex, of which the original orphanage buildings remain. These buildings are scheduled for demolition due to cost of upkeep and asbestos risks. Stanwell Corporation Ltd currently owns the land within this Precinct.

Precinct E has direct access off the Capricorn Highway but is currently largely undeveloped with a limited local road network and no serviced lots. Easements containing transmission lines and a SunWater pipeline do however run through this Precinct. The topography can be described as undulating hills and floodplains,



separated by Neerkol Creek and an unnamed tributary. Neerkol Creek runs along the western and northern perimeter of the Precinct and regional flooding of this waterway is significant, affecting a majority of the subject land. Cultural heritage issues have also been identified by Rockhampton City Council.

A flood investigation carried out for Stanwell Corporation on this site indicated that a significant amount of this precinct would be inundated during regional flooding events. Based on this study, an estimated 50 hectares of vacant and constraint free developable land would be available in this Precinct. Development opportunities exist for a single large scale, land extensive industrial activity. Suggested general and special industry uses include automotive component manufacturing, tool/die making, steel and other metal industries and specialist support service industries.

General Industry Precinct F

General Industry Precinct F is an oddly shaped Precinct located relatively centrally in the Gracemere-Stanwell Industrial Precinct and directly south of Precinct E and the Capricorn Highway. The Precinct consists of four lots ranging from less than a hectare to 24.4 hectares. The existing land use is predominantly vacant land.

While there is access off the Capricorn Highway, with a nearby rail crossing in close proximity, access is considered poor. The Precinct has a limited local road network and no serviced lots. Significant vegetation and steep land constrain parts of the Precinct, with hilly land located to the east and south. Easements containing transmission lines and a SunWater pipeline run through this Precinct.

This Precinct was originally intended for a rail siding off the Capricorn Highway; however development opportunities exist for industry with synergies to the Stanwell Power Station. There is potential for general industry uses which may include (as listed in the planning scheme) tool or die making, transport related activities and service industries. There is an estimated 35 hectares of vacant and developable land.

General Industry Precinct G

General Industry Precinct G is located immediately east of the township of Stanwell and south of the Capricorn Highway. The Precinct consists of lot sizes of predominantly several hectares, ranging from 0.01 to 8.45 hectares. Land in Precinct G is predominantly vacant. Stanwell Corporation Ltd currently owns the land within this Precinct.

The Precinct has direct access off Capricorn Highway, with a nearby rail crossing in close proximity. Being largely undeveloped, a limited local road network and no serviced lots exist. The Precinct backs onto Neerkol Creek and regional flooding, significant vegetation and steep land constraint various parts of the Precinct. Residential development of Stanwell township is also in close proximity of the subject land.

There is an estimated 40 hectares of vacant and developable land in Precinct G. Development opportunities exist for general industry uses, particularly with synergies to nearby industrial facilities are supported in the planning scheme. Examples include



industries relying on cogeneration using steam from the Stanwell Power Station, minor food processing and research.

Special Industry Precinct H

Special Industry Precinct H is located south of Precinct G, along the existing access road to the Stanwell Power Station. Lot sizes include six large lots ranging from 10.1 hectares to 26.7 hectares and six smaller lots of less than 4 hectares. Land in Precinct H is predominantly vacant. The Stanwell Power Station is located in close proximity to the west and Capricorn Sandstone Quarries is located directly south. Stanwell Corporation Ltd currently owns the land within this Precinct.

The Precinct has direct access off the Capricorn Highway, with a nearby rail crossing existing. Other than a main access road through the Precinct, it is currently undeveloped with no local road network or serviced lots. Precinct H also backs onto Neerkol Creek and regional flooding, significant vegetation and steep land constraint various parts of the Precinct.

Development opportunities exist in Precinct H for general industry uses with synergies to the nearby Stanwell Power Station. Examples provided include automotive component manufacturing, light metal castings, and uses relying on cogeneration using steam from the Stanwell Power Station. There is an estimated 100 hectares of vacant and developable land in this Precinct.

Special Industry Precinct I

Special Industry Precinct I comprises the existing Stanwell Power Station and is located southwest of the township of Stanwell. Lot sizes include seven very large lots ranging from 51.2 hectares to 241.5 hectares and four large lots ranging from 1.7 hectares to 31.7 hectares. The predominant existing land use in the Precinct is the Stanwell Power Station, with significant areas of vacant land surrounding the use. The Zerogen Project, involving the construction of a 530MW Integrated Gasification Combined Cycle power generation plant, is earmarked for vacant land in the west of the Precinct. Stanwell Corporation Ltd currently owns the land within this Precinct.

Access to the Precinct exists from Stanwell township and Power Station Road from the Capricorn Highway. A rail loop off the Central Railway line is contained within the Precinct. Neerkol Creek is located to the north and northeast and a tributary of Neerkol Creek traverses north south through the western half of the Precinct. Significant vegetation and steep land may be a constraint for development in some areas.

There is an estimated 125 hectares of vacant and developable land in Precinct I and provides development opportunities for industries with synergies to the Stanwell Power Station. Examples include precast alloy/magnesium foundry, magnesium scrap and dross reprocessing, carbon anode preparation, electrolytic cell repair, fly ash processing, chlor-alkali plant, gas phase chemical waste reduction and other uses relying on cogeneration using steam from the power station.



General Industry Precinct J

The General Industry Precinct J is a linear Precinct located centrally along the corridor between Precincts C, D and F. Lot sizes include 14 very large lots ranging from 15.7 hectares to 76 hectares and 5 smaller lots ranging from less than a hectare to 8 hectares. The predominant existing land uses are vacant land and rural residences. Residential development of Kabra township is located to the north and rural residential to the south.

The Precinct has direct access off the Capricorn Highway, but poor access over the rail line. The standard of roads within the Precinct is generally insufficient for heavy vehicle movements. Land within the Precinct is largely cleared and flat. There are no services in Precinct J. The need for a major drainage corridor through the Precinct has also been identified, however further hydrological assessment is required.

Development opportunities exist in Precinct J for general industry and especially hard to locate, land intensive uses. Examples provided in the planning scheme include agricultural and mining machinery manufacturing/repairing, refractory product making, freight depots and other transport related facilities, meat and fruit processing, scrap metal yards. There is an estimated 440 hectares of vacant and developable land.

Rural/Village Balance Precinct K

Precinct K has not been included in the audit as it is rural and residential in nature.

Gracemere Town Zone

The Gracemere Town Zone consists of an industrial area within the Gracemere township, just south of the Capricorn Highway. Existing industrial activity represents a linear strip of predominantly light and service industry. Some uses are dilapidated but there are also some modern serviced lots and industrial units available. There were 39 businesses identified within the industrial area, with the most significant industrial land sectors being service industry (23.1% of businesses) and warehousing and storage (20.5% of businesses).

The area comprises several small to medium parcels ranging from 505 m² to 4000 m², and several larger parcels ranging from 5000m² to 12.2 hectares. The area has access off two state controlled roads and has generally sufficient local road access. Residential areas are located in close proximity to the industrial area and commercial uses of the Gracemere town centre are located to the south.

In the Gracemere Town Zone industrial area, there were 3.65 hectares of vacant and developable industrial land and 0.33 hectares of developable remnant housing identified. Due to the linear nature and bordering high order road network, some medium and high impact uses may be appropriate in this area if effectively buffered from incompatible uses.

Fitzroy Special Industrial Zone

The Fitzroy Special Industrial Zone consists of three existing major industrial uses including the Marmor Works Area, the Bajool Explosives Magazine Area and the Bouldercombe Brickworks site. The Special Industrial Zone also includes land



earmarked for expansion of the existing industrial uses and the co-location of related industries.

Bouldercombe Brickworks Area

The Bouldercome Brickworks Area is located around 15 kilometres south of Gracemere and consists of a single lot of 2.4 hectares. The existing lot is serviced and has access off an arterial road with capacity for heavy vehicles. The land in the area is largely cleared and generally flat.

The built form of the area includes a single high impact use with established buildings to support its operation as a brick manufacturer.

Development opportunities in the area are fairly limited with no vacant industry zoned allotments. There is however significant vacant land surrounding the use.

Bajool Explosive Magazine Area

The Bajool Explosive Magazine Area is located around 30 kilometres southeast of Gracemere and 1.5 kilometres northwest of the Bajool town centre. It consists of three serviced lots of 174.5, 16.3 and 4.7 hectares. Access exists off the Bruce Highway, with capacity to accommodate heavy vehicle movements.

The existing use, being the Dyno Nobel Explosive Magazine manufacturing facility, is a noxious and hazardous industry, which is desired to be separated from other settlement activities. Significant vegetation has been retained on site, as a means of providing buffering of internal activities and also external to the site.

Current development opportunities in the Area are limited with no vacant industry zoned allotments existing. There is however significant vacant land surrounding the use.

Marmor Works Area

The Marmor Works Area is located immediately north of the small town of Marmor, located around 40 kilometres southeast of Gracemere on the Bruce Highway. The Area consists of two serviced lots of 7.6 and 16.1 hectares. Local road access exists to the Bruce Highway, with capacity for heavy vehicles. Land in the Area is substantially cleared and generally flat.

The current use is an operational limeworks and is an extractive industry in nature. Existing built form includes numerous associated structures and operating machinery.

There are no vacant industry zoned allotments in the Area however uses that rely on co-location with the limeworks are considered compatible in planning scheme.

Mount Morgan Shire

Mount Morgan is located approximately 39 kilometres south of Rockhampton along the Bruce Highway. Mount Morgan Planning Scheme does not currently include an industrial zone and existing uses are contained within the Business Zone. There were three businesses identified in Mount Morgan including a construction services business and two basic material wholesaling businesses. Due to the lack of appropriate zoning, there was no vacant and developable industrial zoned land identified in Mount Morgan.



Appendix D

Industrial Land Supply per Sub Area and Industry Zone



Table D-1 Rockhampton Industrial Land Supply per Sub Area (ha)

Sub Area	Developable Land
Airport	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
CBD	
Low Impact Industry	3
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	3
North Rockhampton Balance	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
North Rockhampton Commercial Corridor	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
North Rockhampton Industrial	
Low Impact Industry	1
Medium Impact Industry	0
High Impact Industry	0



Sub Area	Developable Land
Noxious & Hazardous Industry	0
Total	1
North Rockhampton Residential	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	2
Noxious & Hazardous Industry	0
Total	2
Parkhurst Kawana Industrial Area	
Low Impact Industry	103
Medium Impact Industry	61
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	164
South Rockhampton Industrial	
Low Impact Industry	1
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	1
South Rockhampton Balance	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
South Rockhampton Commercial Corridor	
Low Impact Industry	0
Medium Impact Industry	0



Sub Area	Developable Land
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
South Rockhampton Residential	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
Rockhampton Total	
Low Impact Industry	108
Medium Impact Industry	61
High Impact Industry	2
Noxious & Hazardous Industry	0
Total	171

Table D-2 Fitzroy Industrial Land Supply per Sub Area (ha)

Sub Area	Developable Land
Gracemere (includes Gracemere Township, Precincts A & B)	
Low Impact Industry	49
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	49
Stanwell Industrial Corridor (includes Precincts C - J)	
Low Impact Industry	0
Medium Impact Industry	322
High Impact Industry	524
Noxious & Hazardous Industry	50



Sub Area	Developable Land
Total	896
Fitzroy Rural (includes Special Industrial Zone)	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
Fitzroy Total	
Low Impact Industry	49
Medium Impact Industry	322
High Impact Industry	524
Noxious & Hazardous Industry	50
Total	945

Table D-3 Livingstone Industrial Land Supply per Sub Area (ha)

Sub Area	Developable Land
Emu Park & Surrounds	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
Kinka Beach & Surrounds	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
Livingstone Rural Balance	



Sub Area	Developable Land
Low Impact Industry	1
Medium Impact Industry	2
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	3
The Caves / Rockyview	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
Yeppoon & Surrounds	
Low Impact Industry	3
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	3
Livingstone Total	
Low Impact Industry	4
Medium Impact Industry	2
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	6

Table D-4 Mount Morgan Industrial Land Supply per Sub Area (ha)

Sub Area	Developable Land
Mount Morgan Township	
Low Impact Industry	0



Sub Area	Developable Land
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
Mount Morgan Rural	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0
Mount Morgan Total	
Low Impact Industry	0
Medium Impact Industry	0
High Impact Industry	0
Noxious & Hazardous Industry	0
Total	0



Appendix E

Supply Demand Balance per Sub Area and Industry Zone

Supply Demand Balance per Sub Area and Industry Zone
Rockhampton City Planning Area

	Airport					CBD					North Rockhampton Balance					North Rockhampton Commercial Corridor				
	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
GROSS INCREMENTAL DEMAND (HA)																				
Low Impact Industry	0.0	0.1	0.1	0.2	0.2	0.0	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.4	0.4
Medium Impact Industry	0.0	0.2	0.2	0.3	0.4	0.0	0.2	0.2	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	0.8	1.0
High Impact Industry	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3
Noxious & Hazardous Industry	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3
Total	0.1	0.4	0.5	0.6	0.8	0.1	0.4	0.5	0.6	0.8	0.0	0.0	0.0	0.0	0.0	0.3	0.9	1.3	1.6	2.0
SUPPLY (HA)																				
Low Impact Industry	0.0	0.0	0.0	0.0	0.0	2.9	2.9	2.9	2.9	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medium Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious & Hazardous Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	2.9	2.9	2.9	2.9	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SUPPLY-DEMAND BALANCE (HA)																				
Low Impact Industry	0.0	-0.1	-0.1	-0.2	-0.2	2.9	2.8	2.8	2.7	2.7	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.3	-0.4	-0.4
Medium Impact Industry	0.0	-0.2	-0.2	-0.3	-0.4	0.0	-0.2	-0.2	-0.3	-0.4	0.0	0.0	0.0	0.0	0.0	-0.1	-0.4	-0.6	-0.8	-1.0
High Impact Industry	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.3
Noxious & Hazardous Industry	0.0	-0.1	-0.1	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.3	-0.3
Total	0.0	-0.4	-0.5	-0.7	-0.8	2.9	2.5	2.4	2.2	2.1	0.0	0.0	0.0	0.0	0.0	-0.2	-0.9	-1.2	-1.7	-2.0
	North Rockhampton Industrial					North Rockhampton Residential					Parkhurst Kawana Industrial Corridor					South Rockhampton Industrial				
	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
GROSS INCREMENTAL DEMAND (HA)																				
Low Impact Industry	0.2	0.6	0.7	0.8	0.9	0.0	0.1	0.1	0.2	0.2	2.5	8.6	10.0	11.3	13.0	0.4	1.5	1.7	2.0	2.2
Medium Impact Industry	0.2	0.8	1.2	1.5	1.9	0.0	0.2	0.2	0.3	0.4	3.4	11.8	16.9	22.2	28.1	0.6	2.0	2.9	3.8	4.8
High Impact Industry	0.0	0.2	0.3	0.4	0.5	0.0	0.0	0.1	0.1	0.1	0.7	2.6	4.2	5.9	7.8	0.1	0.5	0.7	1.0	1.3
Noxious & Hazardous Industry	0.1	0.3	0.4	0.5	0.7	0.0	0.1	0.1	0.1	0.1	1.1	4.1	5.8	7.6	9.5	0.2	0.7	1.0	1.3	1.6
Total	0.5	1.9	2.6	3.2	4.0	0.1	0.4	0.5	0.6	0.8	7.6	27.2	37.0	47.0	58.3	1.3	4.7	6.4	8.1	10.1
SUPPLY (HA)																				
Low Impact Industry	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	102.6	102.6	102.6	102.6	102.6	0.7	0.7	0.7	0.7	0.7
Medium Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.4	61.4	61.4	61.4	61.4	0.0	0.0	0.0	0.0	0.0
High Impact Industry	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious & Hazardous Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	164.0	164.0	164.0	164.0	164.0	0.7	0.7	0.7	0.7	0.7
SUPPLY-DEMAND BALANCE (HA)																				
Low Impact Industry	0.8	0.4	0.3	0.2	0.1	0.0	-0.1	-0.1	-0.2	-0.2	100.1	94.0	92.6	91.3	89.6	0.3	-0.8	-1.0	-1.3	-1.5
Medium Impact Industry	-0.2	-0.8	-1.2	-1.5	-1.9	0.0	-0.2	-0.2	-0.3	-0.4	58.0	49.6	44.5	39.2	33.3	-0.6	-2.0	-2.9	-3.8	-4.8
High Impact Industry	0.0	-0.2	-0.3	-0.4	-0.5	2.0	2.0	1.9	1.9	1.9	-0.7	-2.6	-4.2	-5.9	-7.8	-0.1	-0.5	-0.7	-1.0	-1.3
Noxious & Hazardous Industry	-0.1	-0.3	-0.4	-0.5	-0.7	0.0	-0.1	-0.1	-0.1	-0.1	-1.1	-4.1	-5.8	-7.6	-9.5	-0.2	-0.7	-1.0	-1.3	-1.6
Total	0.5	-0.9	-1.6	-2.2	-3.0	2.0	1.6	1.5	1.3	1.2	156.3	136.8	127.0	117.0	105.7	-0.6	-4.0	-5.6	-7.4	-9.2
	South Rockhampton Balance					South Rockhampton Commercial Corridor					South Rockhampton Residential					Rockhampton Total				
	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
GROSS INCREMENTAL DEMAND (HA)																				
Low Impact Industry	0.0	0.1	0.1	0.2	0.2	0.1	0.3	0.3	0.4	0.4	0.0	0.1	0.1	0.2	0.2	3.5	11.8	13.8	15.6	17.9
Medium Impact Industry	0.0	0.2	0.2	0.3	0.4	0.1	0.4	0.6	0.8	1.0	0.0	0.2	0.2	0.3	0.4	4.6	16.3	23.3	30.6	38.8
High Impact Industry	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.3	0.0	0.0	0.1	0.1	0.1	1.0	3.6	5.9	8.2	10.7
Noxious & Hazardous Industry	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.3	0.3	0.0	0.1	0.1	0.1	0.1	1.5	5.7	8.0	10.4	13.0
Total	0.1	0.4	0.5	0.6	0.8	0.3	0.9	1.3	1.6	2.0	0.1	0.4	0.5	0.6	0.8	10.5	37.5	51.0	64.8	80.5
SUPPLY (HA)																				
Low Impact Industry	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	107.7	107.7	107.7	107.7	107.7
Medium Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.4	61.4	61.4	61.4	61.4
High Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
Noxious & Hazardous Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	171.0	171.0	171.0	171.0	171.0
SUPPLY-DEMAND BALANCE (HA)																				
Low Impact Industry	0.0	-0.1	-0.1	-0.2	-0.2	0.3	0.1	0.1	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	104.2	95.9	93.9	92.1	89.8
Medium Impact Industry	0.0	-0.2	-0.2	-0.3	-0.4	-0.1	-0.4	-0.6	-0.8	-1.0	0.0	-0.2	-0.2	-0.3	-0.4	56.8	45.1	38.1	30.8	22.6
High Impact Industry	0.0	0.0	-0.1	-0.1	-0.1	0.0	-0.1	-0.1	-0.2	-0.3	0.0	0.0	-0.1	-0.1	-0.1	1.0	-1.6	-3.9	-6.2	-8.7
Noxious & Hazardous Industry	0.0	-0.1	-0.1	-0.1	-0.1	0.0	-0.1	-0.2	-0.3	-0.3	0.0	-0.1	-0.1	-0.1	-0.1	-1.5	-5.7	-8.0	-10.4	-13.0
Total	0.0	-0.4	-0.5	-0.7	-0.8	0.2	-0.5	-0.8	-1.3	-1.6	0.0	-0.4	-0.5	-0.7	-0.8	160.4	133.6	120.0	106.2	90.6

Note: Base year is 2010

**Supply Demand Balance per Sub Area and Industry Zone
Fitzroy Planning Area**

	Gracemere (incl. Precincts A&B)					Stanwell Industrial Corridor (Precincts C-K)					Fitzroy Rural (Special Industrial)					Fitzroy Total				
	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
GROSS INCREMENTAL DEMAND (HA)																				
Low Impact Industry	0.0	0.1	0.3	0.6	0.9	0.5	2.1	6.0	10.5	15.7	0.0	0.1	0.3	0.6	0.9	0.5	2.3	6.6	11.7	17.4
Medium Impact Industry	0.0	0.2	0.5	0.8	1.1	0.7	3.3	8.2	13.9	20.4	0.0	0.2	0.5	0.8	1.1	0.7	3.7	9.1	15.5	22.6
High Impact Industry	0.0	0.0	0.1	0.2	0.4	0.1	0.7	2.4	4.5	7.1	0.0	0.0	0.1	0.2	0.4	0.1	0.8	2.6	5.0	7.9
Noxious & Hazardous Industry	0.0	0.1	0.2	0.4	0.6	0.3	1.5	4.1	7.4	11.3	0.0	0.1	0.2	0.4	0.6	0.3	1.6	4.6	8.2	12.5
Total	0.1	0.4	1.1	2.0	3.0	1.5	7.6	20.7	36.3	54.4	0.1	0.4	1.1	2.0	3.0	1.7	8.4	23.0	40.3	60.5
SUPPLY (HA)																				
Low Impact Industry	49.0	49.0	49.0	49.0	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	49.0	49.0	49.0	49.0
Medium Impact Industry	0.0	0.0	0.0	0.0	0.0	321.6	321.6	321.6	321.6	321.6	0.0	0.0	0.0	0.0	0.0	321.6	321.6	321.6	321.6	321.6
High Impact Industry	0.0	0.0	0.0	0.0	0.0	524.4	524.4	524.4	524.4	524.4	0.0	0.0	0.0	0.0	0.0	524.4	524.4	524.4	524.4	524.4
Noxious & Hazardous Industry	0.0	0.0	0.0	0.0	0.0	50.0	50.0	50.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	50.0	50.0	50.0
Total	49.0	49.0	49.0	49.0	49.0	896.0	896.0	896.0	896.0	896.0	0.0	0.0	0.0	0.0	0.0	945.0	945.0	945.0	945.0	945.0
SUPPLY-DEMAND BALANCE (HA)																				
Low Impact Industry	49.0	48.9	48.7	48.4	48.1	-0.5	-2.1	-6.0	-10.5	-15.7	0.0	-0.1	-0.3	-0.6	-0.9	48.5	46.7	42.4	37.3	31.6
Medium Impact Industry	0.0	-0.2	-0.5	-0.8	-1.1	320.9	318.3	313.4	307.7	301.2	0.0	-0.2	-0.5	-0.8	-1.1	320.9	317.9	312.5	306.1	299.0
High Impact Industry	0.0	0.0	-0.1	-0.2	-0.4	524.3	523.7	522.0	519.9	517.3	0.0	0.0	-0.1	-0.2	-0.4	524.3	523.6	521.8	519.4	516.5
Noxious & Hazardous Industry	0.0	-0.1	-0.2	-0.4	-0.6	49.7	48.5	45.9	42.6	38.7	0.0	-0.1	-0.2	-0.4	-0.6	49.7	48.4	45.4	41.8	37.5
Total	48.9	48.6	47.9	47.0	46.0	894.5	888.4	875.3	859.7	841.6	-0.1	-0.4	-1.1	-2.0	-3.0	943.3	936.6	922.0	904.7	884.5

Note: Base year is 2010

**Supply Demand Balance per Sub Area and Industry Zone
Livingstone Planning Area**

	Emu Park & Surrounds					Kinka Beach & Surrounds					Livingstone Rural Balance					The Caves / Rockyview				
	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
GROSS INCREMENTAL DEMAND (HA)																				
Low Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.8	0.5	2.0	3.9	6.1	8.4	0.0	0.0	0.1	0.2	0.2
Medium Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.8	1.3	1.9	2.4	0.0	0.0	0.0	0.0	0.1
High Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.9	1.3	1.7	2.1	0.0	0.0	0.0	0.0	0.1
Noxious & Hazardous Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.8	1.3	1.9	2.4	0.0	0.0	0.0	0.0	0.1
Total	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.8	1.2	1.5	1.1	4.4	7.8	11.6	15.4	0.0	0.1	0.2	0.3	0.4
SUPPLY (HA)																				
Low Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	0.0	0.0	0.0	0.0	0.0
Medium Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8	1.8	0.0	0.0	0.0	0.0	0.0
High Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious & Hazardous Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0
SUPPLY-DEMAND BALANCE (HA)																				
Low Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.4	-0.6	-0.8	0.7	-0.8	-2.7	-4.9	-7.2	0.0	0.0	-0.1	-0.2	-0.2
Medium Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	1.6	1.0	0.5	-0.1	-0.6	0.0	0.0	0.0	0.0	-0.1
High Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.9	-1.3	-1.7	-2.1	0.0	0.0	0.0	0.0	-0.1
Noxious & Hazardous Industry	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.8	-1.3	-1.9	-2.4	0.0	0.0	0.0	0.0	-0.1
Total	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	-0.7	-1.2	-1.4	1.9	-1.5	-4.8	-8.6	-12.3	0.0	0.0	-0.1	-0.2	-0.5

	Yeppoon & Surrounds					Livingstone Total				
	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
GROSS INCREMENTAL DEMAND (HA)										
Low Impact Industry	0.7	2.7	5.4	8.4	11.5	1.2	5.0	9.8	15.3	21.0
Medium Impact Industry	0.3	1.1	1.8	2.6	3.3	0.5	1.9	3.3	4.7	6.1
High Impact Industry	0.3	1.2	1.8	2.4	2.9	0.5	2.1	3.2	4.3	5.3
Noxious & Hazardous Industry	0.3	1.1	1.8	2.6	3.3	0.5	2.0	3.3	4.7	6.1
Total	1.5	6.1	10.8	15.9	21.1	2.7	11.1	19.6	29.0	38.4
SUPPLY (HA)										
Low Impact Industry	3.0	3.0	3.0	3.0	3.0	4.2	4.2	4.2	4.2	4.2
Medium Impact Industry	0.0	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8	1.8
High Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious & Hazardous Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	3.0	3.0	3.0	3.0	3.0	6.0	6.0	6.0	6.0	6.0
SUPPLY-DEMAND BALANCE (HA)										
Low Impact Industry	2.3	0.3	-2.4	-5.4	-8.5	3.0	-0.8	-5.6	-11.1	-16.8
Medium Impact Industry	-0.3	-1.1	-1.8	-2.6	-3.3	1.3	-0.1	-1.5	-2.9	-4.3
High Impact Industry	-0.3	-1.2	-1.8	-2.4	-2.9	-0.5	-2.1	-3.2	-4.3	-5.3
Noxious & Hazardous Industry	-0.3	-1.1	-1.8	-2.6	-3.3	-0.5	-2.0	-3.3	-4.7	-6.1
Total	1.4	-3.1	-7.8	-13.0	-18.0	3.3	-5.0	-13.6	-23.0	-32.5

Note: Base year is 2010

**Supply Demand Balance per Sub Area and Industry Zone
Mount Morgan Planning Area**

	Mount Morgan Township					Mount Morgan Rural					Mount Morgan Total				
	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031
GROSS INCREMENTAL DEMAND (HA)															
Low Impact Industry	0.0	0.1	0.2	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.5
Medium Impact Industry	0.0	0.1	0.2	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3
High Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious & Hazardous Industry	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Total	0.1	0.3	0.5	0.7	0.9	0.0	0.0	0.1	0.1	0.1	0.1	0.3	0.5	0.8	1.0
SUPPLY (HA)															
Low Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medium Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious & Hazardous Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SUPPLY-DEMAND BALANCE (HA)															
Low Impact Industry	0.0	-0.1	-0.2	-0.3	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.4	-0.5
Medium Impact Industry	0.0	-0.1	-0.2	-0.2	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.3
High Impact Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Noxious & Hazardous Industry	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.2
Total	-0.1	-0.3	-0.5	-0.7	-0.9	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.3	-0.5	-0.8	-1.0

Note: Base year is 2010

**Supply Demand Balance per Sub Area and Industry Zone
Rockhampton Region**

	Mount Morgan Total					Livingstone Total					Rockhampton Total					Fitzroy Total					Rockhampton Region									
	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031	2011	2016	2021	2026	2031					
GROSS INCREMENTAL DEMAND (HA)																														
Low Impact Industry	0	0	0	0	1	1	5	10	15	21	4	12	14	16	18	1	2	7	12	17	5	19	31	43	57					
Medium Impact Industry	0	0	0	0	0	1	2	3	5	6	5	16	23	31	39	1	4	9	16	23	6	22	36	51	68					
High Impact Industry	0	0	0	0	0	1	2	3	4	5	1	4	6	8	11	0	1	3	5	8	2	7	12	18	24					
Noxious & Hazardous Industry	0	0	0	0	0	1	2	3	5	6	2	6	8	10	13	0	2	5	8	13	2	9	16	23	32					
Total	0	0	1	1	1	3	11	20	29	38	11	38	51	65	81	2	8	23	40	61	15	57	94	135	180					
SUPPLY (HA)																														
Low Impact Industry	0	0	0	0	0	4	4	4	4	4	108	108	108	108	108	49	49	49	49	49	161	161	161	161	161					
Medium Impact Industry	0	0	0	0	0	2	2	2	2	2	61	61	61	61	61	322	322	322	322	322	385	385	385	385	385					
High Impact Industry	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	524	524	524	524	524	526	526	526	526	526					
Noxious & Hazardous Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	50	50	50	50	50	50	50	50	50					
Total	0	0	0	0	0	6	6	6	6	6	171	171	171	171	171	945	945	945	945	945	1122	1122	1122	1122	1122					
SUPPLY-DEMAND BALANCE (HA)																														
Low Impact Industry	0	0	0	0	-1	3	-1	-6	-11	-17	104	96	94	92	90	49	47	42	37	32	156	142	130	118	104					
Medium Impact Industry	0	0	0	0	0	1	0	-2	-3	-4	57	45	38	31	23	321	318	313	306	299	379	363	349	334	317					
High Impact Industry	0	0	0	0	0	-1	-2	-3	-4	-5	1	-2	-4	-6	-9	524	524	522	519	517	525	520	515	509	503					
Noxious & Hazardous Industry	0	0	0	0	0	-1	-2	-3	-5	-6	-2	-6	-8	-10	-13	50	48	45	42	38	48	41	34	27	18					
Total	0	0	-1	-1	-1	3	-5	-14	-23	-32	161	134	120	106	91	943	937	922	905	885	1107	1065	1028	987	942					



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